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THE JOURNAL

OF THE

American Medical Association

Annual Subscription, $5.00 | PUBLISHED WEEKLY | Single Copies, 20 Cents

VOLUME 84, No. 11 | 535 North Dearborn Street, CHICAGO, ILL. | MARCH 14, 1925

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Entered as Second-Class Matter, June 25, 1885, at the Postoffice at Chicago, Ill., under Act of March 3, 1879. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized on June 14, 1918. If undeliverable, return postage is guaranteed

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The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 84, NO. 11 CHICAGO, ILLINOIS MARCH 14, 1925

LOW, OR CERVICAL, CESAREAN SECTION (LAPAROTRACHELOTOMY)

THREE HUNDRED AND THIRTY OPERATIONS, WITH TWO DEATHS

JOSEPH B. DE LEE, M.D.

CHICAGO

Puerperal infection, eclampsia and hemorrhage still carry away thousands of our mothers annually. Many of these lives could be saved if all accoucheurs were fully alive to the possibilities of modern obstetrics. Another factor that contributes to the high maternal mortality—growing bigger every year—is cesarean section. Letters from the U. S. Bureau of the Census indicate that the number of deaths following cesarean section in the death registration area in 1920 was 212; in 1921, 247, and in 1922, 266. The data from this cause do not include such deaths reported jointly with puerperal albuminuria and convulsions, puerperal septicemia, etc. Dr. William H. Davis, chief statistician for vital statistics, points out that it is not possible, from the information given on the death certificates, to determine in all cases whether peritonitis results from cesarean section or is a part of ordinary puerperal sepsis. "However," he says, "the practice of assignment here in the bureau is to charge to puerperal septicemia the joint causes, peritonitis and cesarean section. Therefore, the number of certificates which show that cesarean section was performed was undoubtedly much larger than was indicated by the figures."

That 500 women die annually in the United States following abdominal delivery, I feel sure is not an exaggeration; and I feel equally sure that a large part of this fatality could be eliminated.

In the first place, it is a notorious fact that too many cesarean sections are being done. The indications are too loosely applied, and women are operated on who should not be exposed to the risks of abdominal delivery. We could reduce this element of mortality by reverting to the old and tried obstetric methods of delivery, and we could gain still greater additional reduction if the old classic cesarean were supplanted by the new, low, or cervical operation here described.

Three hundred and thirty consecutive laparotrachelotomies with two maternal deaths (one preventable) is a record that should arrest the attention of all obstetricians and surgeons. Reports of 145 of these cases were published[1] in 1922. The first death occurred in this series; it was from peritonitis. The patient was a bad risk; the weight was 270 pounds (122.5 kg.); the systolic blood pressure was 208; diastolic, 130; there was albuminuria; the patient had been in labor four days, and many examinations had been made. The second death was of a Mexican woman who died from ether pneumonia, general septicemia and peritonitis—all proved at necropsy by Prof. H. Gideon Wells. Thus, only one death is really chargeable against the 330 laparotrachelotomies.[2]

These 330 cesarean sections were performed at the Chicago Lying-in Hospital, by the operators listed in Table 1.

The morbidity of the operations, and the causes of rise in temperature are given in Table 2. Vomiting occurred once in fifty-one cases, twice in nineteen and three times in fourteen, but was marked in only four (eighty-eight, or 26.6 per cent.).

TABLE 1.—*Operators*

Dr. J. B. De Lee	154
Dr. H. M. Stowe	6
Dr. E. L. Cornell	33
Dr. J. H. Bloomfield	40
Dr. D. S. Hillis	21
Dr. D. A. Horner	16
Dr. Anna R. Lapham	18
Dr. J. P. Greenhill	22
Residents and outside men	20
Total	330

TABLE 2.—*Morbidity, and Causes of Rise in Temperature*

Morbidity of the operations:	
Highest temperature 100.4 F	32
Between 100.4 and 101 F	17
Between 101 and 101.5 F	35
Between 101.5 and 102 F	14
Over 102 F	36
Total	134, or 40.6%
Causes of rise in temperature:	
Pneumonia, bronchitis, sore throat, etc	26
Pyelitis, cystitis	9
Suppuration of the wound	24
Lochiometra	3
Mastitis, 4; breast abscess, 4	8
Peritonitis	1
Appendicitis (operation)	1
Phlegmasia alba dolens	4
Unknown	58

Fecal vomiting occurred in one case, but there was no intestinal obstruction (flatus and feces) and perfect recovery. Since we have begun the use of local anesthesia, nausea and vomiting have almost disappeared, and bronchitis and pneumonia are known no more.

Tympany never was a threatening symptom, and in only three cases was it needful to wash out the stomach. Milk and molasses enemas and turning the patient on the abdomen dispelled the symptoms.

Gas pains have not been a troublesome complication; even these have been less since we began to use local anesthesia. They were present in thirty-two cases.

1. De Lee, J. B., and Cornell, E. L.: Low Cervical Cesarean Section (Laparotrachelotomy): Results in One Hundred and Forty-Five Cases, J. A. M. A. **79**: 109 (July 8) 1922.

2. The statistics for this paper were prepared by Dr. J. P. Greenhill. Since they were gathered, twenty-three more operations have been performed without a death.

The large percentage of febrile reactions is easily explained. First, the report includes the frequent brief postoperative reaction. Secondly, we do the low operation in cases in which we would not think of the classic section—on women who have been in labor hours and

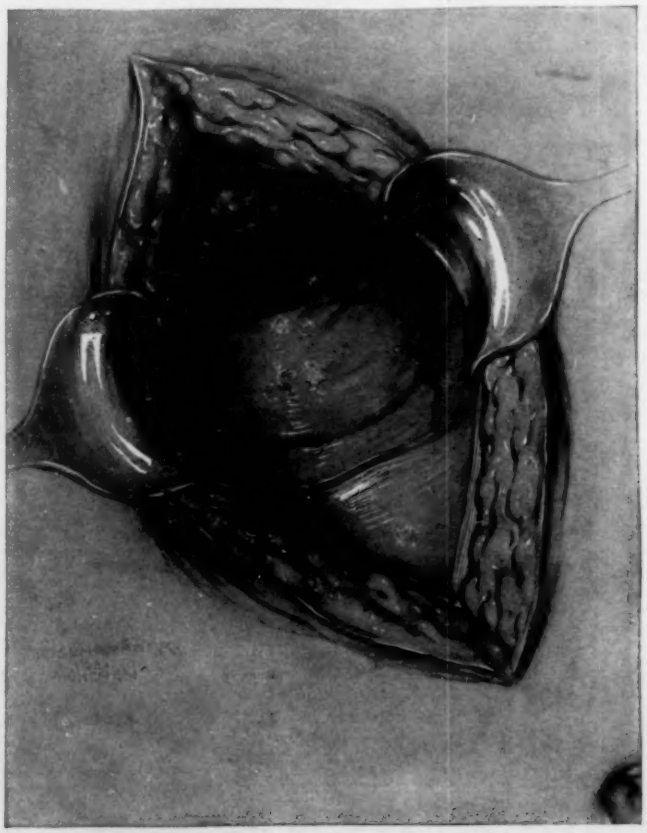

Fig. 1.—Exposure of field in cervical cesarean section, or laparotrachelotomy: Trendelenburg position. The bladder should be empty, with catheter left in. Hypodermic injection of ergot. Median incision from pubis to about 2 inches below navel (6½ inches). The bladder should be looked out for when the abdomen is opened. Now a long, narrow laparotomy sponge is tucked in horseshoe shape around the inside of the opening. The dotted line shows the intended cut, which is 2 cm. below the firm attachment of the peritoneum to the uterus. This incision varies with the height of the bladder on the uterus.

days, with the membranes ruptured likewise hours and days; women on whom forceps had been tried and even colpeurynters had been used for many hours, or on whom numerous vaginal examinations had been made. Outside of such complications, these women are not such good risks because of the long labor, the depleted powers, loss of sleep, acidosis, etc. On the other hand, while we submitted to classic section only the clean cases and women in good condition, early in labor or indeed not in labor, yet we had a larger febrile morbidity, 46 per cent. At the same time, we had much more trouble from peritoneal reactions.

Of the 330 cases, 328 babies were delivered alive; two were dead before operation (one abruptio placentae, one nephritis, macerated fetus); two died shortly after delivery (one atelectasis, one thymus). No death could be assigned to the mode of delivery.

CLASSIC CESAREAN SECTIONS

During the period of time covered by this report, 136 of the classic cesarean sections were performed by the same operators. Seven of these women died; two from peritonitis, three from toxemia of pregnancy, one from heart disease, and one from abruptio placentae—not such a good showing when one considers that these were presumably clean cases and relatively good risks.

The morbidity of the 136 operations and the causes of rise in temperature are given in Table 3. The incidence of wound infection is noteworthy. Twenty-four of the 330 laparotrachelotomies and twenty-four

TABLE 3.—*Morbidity and Causes of Rise in Temperature in One Hundred and Thirty-Six Cases (Classic)*

Highest temperature, 100.4 F. (38 C.)	24	
Between 100.4 and 101 F.	8	
Between 101 and 101.5 F.	8	
Between 101.5 and 102 F.	4	
Over 102 F.	19	
Total	63,	or 46%
Causes of rise in temperature:		
Pneumonia, bronchitis, sore throat, etc.	4	
Pyelitis	2	
Peritonitis	3	
Suppuration of the wound	24	
Pyemia	1	
Appendicitis	1	
Mastitis	2	
Phlegmasia alba dolens	2	
Rupture of abdominal wound	1	
Unknown	24	

of the 136 classic sections suppurated, 7 per cent. and 17.6 per cent., respectively. Vomiting occurred in fifty-two cases, 38 per cent., and was marked in five. Tympany occurred in many cases and required the

Fig. 2.—Dissecting the lower flap: After the peritoneum has been incised, it is gently stripped toward the pubis, together with the bladder, by means of the finger. Large bleeding veins are tied with fine catgut (rarely needed). The point of the raised peritoneum shown in the illustration is sewed with one suture to the skin of the pubic end of the incision, or held with Allis forceps.

stomach tube more frequently than after laparotrachelotomy. The records are incomplete on these points. Gas pains were noted in twenty-two cases.

The most striking feature of the recovery after the low operation is the absence of postoperative depression and the feeling of well being during the puerperium. The patients have less shock and more of the aspect and sensations of a normal woman than

Fig. 3.—Dissecting the upper flap: The upper flap of peritoneum is made in the same way, being pushed up toward the navel to a point which delimits the upper end of the uterine incision. One should be sure that the bladder is pushed down far enough to expose an area of lower uterine segment sufficient for the exit of the child. This should be between 4 and 5 inches long, depending on the size of the baby.

after the classic operation, and often feel better than the usual puerpera. Women who have had both kinds of cesarean section are unanimous in their choice of the low, cervical method, and every one of the numerous physicians who have visited our hospital has been convinced of the better recoveries made by the laparotrachelotomies.

The reason for the greater safety as to life and health of the low operation lies entirely in the location of the opening in the lower abdomen and in the cervix or neck of the uterus, and away from the fundus or contractile portion of the organ. The sutured wound is at rest, it can heal undisturbed by the recurring after-pains (fourteen cases are on record of rupture of the classic cesarean wound by the after-pains); the exact closure of the cervix and its coverage by fascia and peritoneum are a full guarantee against seepage of the lochia into the peritoneal cavity and a strong barrier to the transmigration of bacteria; the cervix stands infection better than the corpus because it is used to it; the lower part of the abdomen is more resistant to infection, and, should all protection fail and suppuration ensue, it occurs in the least dangerous region and one that is readily accessible to the surgeon (not high in the abdomen among the intestines or even under the stomach, liver and spleen). It is true that no barrier is an absolute one against a virulent streptococcus. Not even an intact uterus can always stop such an infection. What we do with the low operation is to reduce the dangers to a minimum.

I claim the following points of superiority for laparotrachelotomy over the classic cesarean section:

1. A decidedly lower mortality.
2. A decidedly lower primary morbidity.
3. A greater guarantee against rupture of the uterus in subsequent pregnancy and labor (only five cases on record, all during labor, and three improved).
4. A greater guarantee against intraperitoneal adhesions.
5. Much less likelihood of utero-abdominal fistula (no case yet reported), and fewer hernias.
6. The permissibility to extend the indication for abdominal delivery to cases of neglected labor, even when infection is suspected. Thus we reduce the field of craniotomy on the living child almost to the vanishing point (see below).
7. The possibility of giving the parturient a real test of labor before concluding that abdominal delivery is necessary. Thus many of the latter will be avoided.
8. A broadening of the indication for abdominal delivery for the purpose of saving the life of the child and preventing damage to the mother's soft parts. Here, however, I cannot forbear sounding a warning. The general surgeon whose obstetric judgment is not

Fig. 4.—Intended incision in the lower uterine segment: The bladder is held by a well rounded retractor. With two Allis forceps (or two catgut sutures, if preferred) the upper and lower ends of the intended incision are delimited and the uterus steadied. Now one should be ready for the "spill," either by a supply of large laparotomy sponges or by the vacuum pump.

as well developed as his surgical should not be misled by the excellent results scheduled here to extend the indication for abdominal delivery to all sorts of cases,

infected and otherwise. Most of our cesarean sections were clean and early ones, in a specially designed maternity and isolated from the risks of infection of a general hospital. While I am profoundly certain that

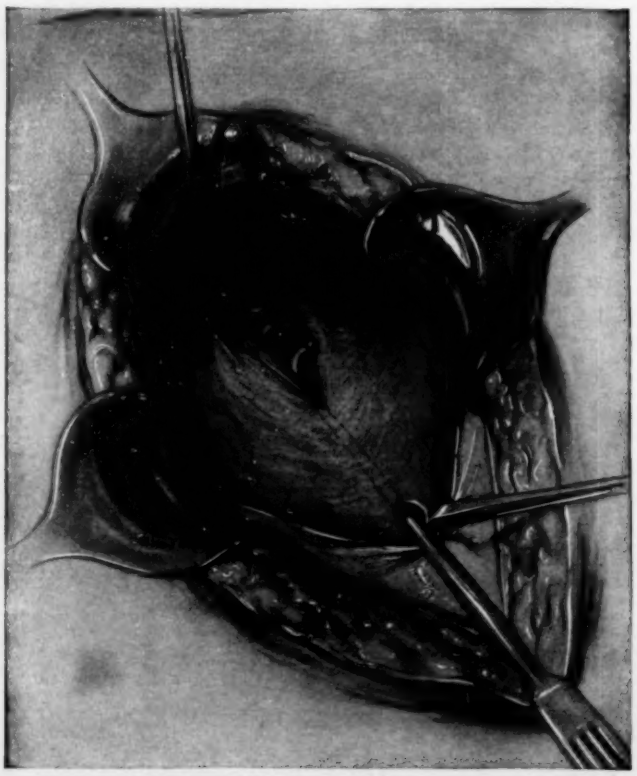

Fig. 5.—A long tonsil knife—bandage scissors can be used just as well—is inserted at the upper end, passed, on the flat, down to the lower Allis forceps, turned, its end brought through, and with a gentle sawing motion the thin uterine wall is cut. One should take good care of the spill, and should not hurry. Bleeding sinuses may be clamped temporarily with Allis or round tongue forceps.

the mortality of abdominal delivery will be reduced by the substitution of the cervical for the high classic operation, I do not wish to appear to be advising the

TABLE 4.—*Indications in Three Hundred and Thirty Laparotrachelotomies*

Contracted pelvis	203
Contracted pelvis with abnormal mechanism	7
Dystocia due to soft parts	5
Eclampsia	3
Toxemia (other than eclampsia)	16
Abruptio placentae	5
A number of previous stillbirths	8
Cardiac disease	12
Placenta praevia	11
Dystrophia dystocia syndrome	26
Pelvic tumors causing dystocia	5
Previous cesarean section (after test of labor)	9
Antefixation of uterus	1
One kidney and pyelitis	1
Malformation of uterus	2
Prolapse of cord	1
Kraske operation for carcinoma of rectum	1
Threatened rupture of uterus	5
Breech in elderly primiparas	3
Fracture of pelvis	1
Contracted pelvis and diabetes	1
Healed third degree laceration and contracted pelvis	1
Hyperthyroidism	1
Total	330

widespread, indiscriminate performance of laparotrachelotomy for all kinds of obstetric complications. Mother Nature may still be trusted, and cool obstetric judgment, taking in all the conditions surrounding a labor case, still needs to be exercised if we wish to keep down maternal mortality in the United States.

There is only one drawback to the cervical section. It takes from twenty to thirty minutes longer than the classic operation, but this is a negligible matter with local anesthesia. That the operation is technically more difficult is a fact, but this should not deter any abdominal surgeon.

TABLE 5.—*Time of Performance of Operation*

Tenth month plus	45	
Tenth month	248	
Nine and one-half months	10	
Nine months	19	
Eight and one-half months	2	
Seven and one-half months	1	
Seven months	1	
Not stated (presumably at term)	4	
Not in labor	132	
Operation with intact membranes	210	
In labor less than 12 hours	66	
In labor from 12 to 24 hours	68	
In labor from 24 to 36 hours	28	
In labor from 36 to 48 hours	15	
In labor more than 48 hours	21	
In labor with ruptured membranes	220	
Shortest period of ruptured membranes	4	hours
Longest period of ruptured membranes	4	days
Number of cases with previous operation, forceps, colpeurynter, gauze	5	
Number of cases with previous vaginal exams.	41	

The indications for the 330 laparotrachelotomies were as given in Table 4.

The time of performance of the operation is given in Table 5.

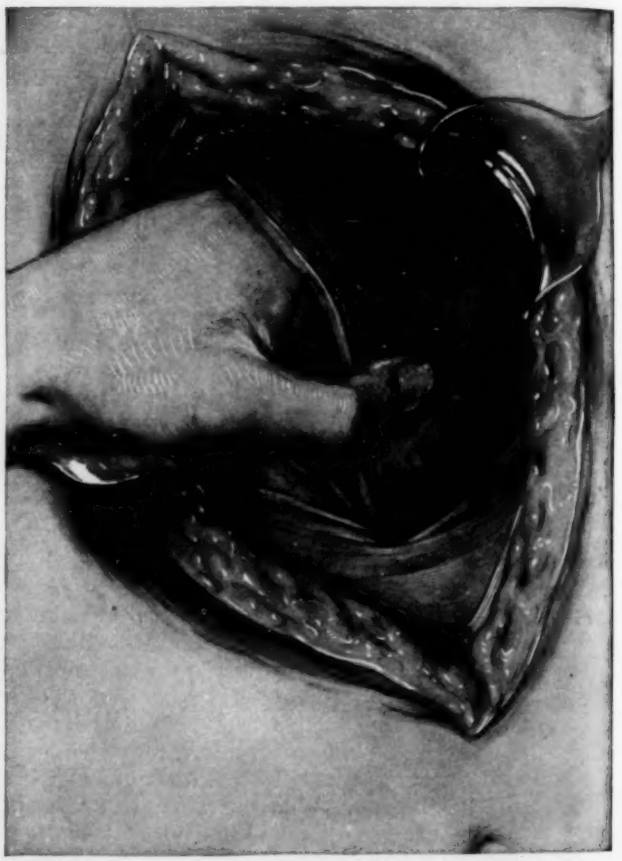

Fig. 6.—Bringing face to front: The face of the child is now pulled into the wound by means of a finger introduced into its mouth. One should not hurry or use force. The throat is cleared with sponges or the vacuum pump. If the occiput comes more readily into the wound it should be steadied with Allis forceps, the scalp being grasped and the forceps applied as usual in a pelvic delivery.

While we have not extended the indications for laparotrachelotomy to cover frankly infected cases, as Küstner, Walthard and others in Germany have done,

we have performed it when we would never even consider the classic section.

The records do not show the incidence of adhesions, but the opinion of the operators is unanimous that

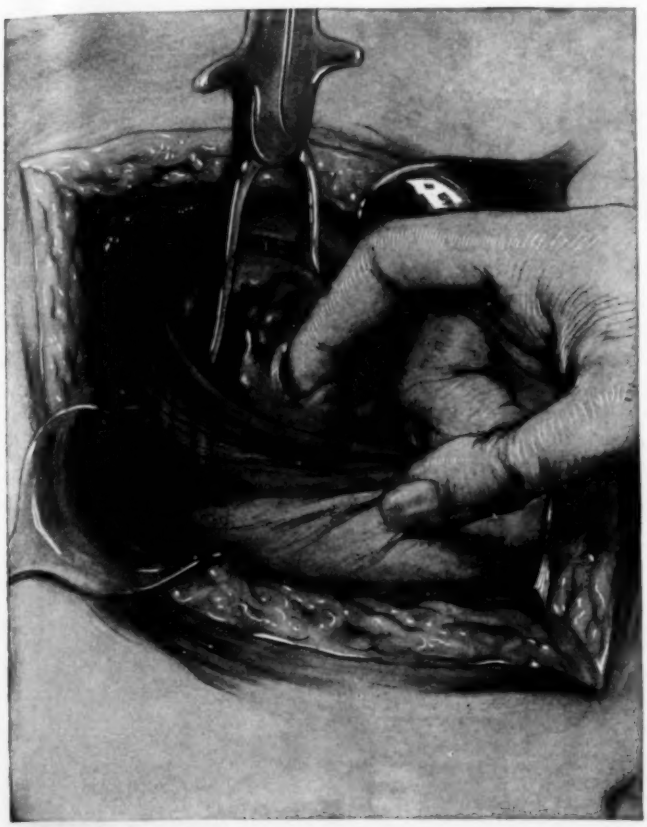

Fig. 7.—The assistant holds the head steady with his finger. The forceps are applied with the concavity of the blades toward the pubis. (In the illustration, straight forceps are being used.) All retractors are removed. Sometimes the head may be expressed by the Kristeller method, or squeezed out from the flanks. The chin is delivered first over the upper (navel end) edge of the wound and the rest of the head by flexion. One should not hurry. The shoulders should be delivered slowly and carefully, time being given for the uterus to contract. The child may breathe freely now. The nurse gives a full cubic centimeter of pituitary extract into the deltoid muscle. The cord is severed; the child is handed to an assistant; then the edges of the wound are grasped with Allis or tongue forceps, as many as are needed to stop bleeding. The separation of the placenta is now observed. Manual removal is not done at once—one should rather wait a few minutes, but not permit bleeding. Credé expression of the placenta is sometimes feasible. The uterus is wiped out carefully and packed temporarily with a long laparotomy sponge. We usually pack the uterus with gauze and lead the end down into the vagina, as a routine. It is necessary if there is too much bleeding and when the cervix is not open enough. If the uterus is sluggish, 1 c.c. of strong pituitary extract is injected directly into it and the aorta is compressed through the posterior wall of the lower uterine segment. One may remove the gauze just before the patient leaves the operating room or within six hours after the operation.

the classic cesarean section is rarely free from them and that after the low operation they are seldom encountered.

THE OPERATION

The low cesarean section technic is rendered possible by certain anatomic changes that occur in the lower uterine segment and the overlying peritoneum and bladder during pregnancy. Owing to the softening and the loosening of the peritoneum and pelvic connective tissues, and to the development of the lower uterine segment in the latter months of pregnancy, and particularly during labor, the cervix is dilated and drawn away from the pelvis and from its relations to the vagina and bladder. The vesico-uterine culdesac is usually obliterated. The peritoneum lies loose on the subjacent structures. It is therefore possible, after incising this portion of the peritoneum, to push the bladder off its cervical attachments with great ease, and to expose an area of the cervix and lower uterine segment large enough for the delivery of the child without encroaching on that portion of the uterus and peritoneal cavity which are concerned in the classic cesarean section.

At the Chicago Lying-in Hospital we have recognized the theoretical value of the two main principles of the low, cervical operation—the avoidance or limi-

TABLE 6.—*Previous Cesarean Sections*

One laparotrachelotomy	22
One classic operation	18
Two classic operations	1
Two laparotrachelotomies	2
One classic operation, one laparotrachelotomy	1
Vaginal cesarean section	1
Unknown	2
Total	47

tation of peritoneal exposure, and the location of the uterine scar in the neck of the uterus—and we have devised a method of cesarean section which is considered by us standard for abdominal delivery. We reserve the old classic operation for rare special indi-

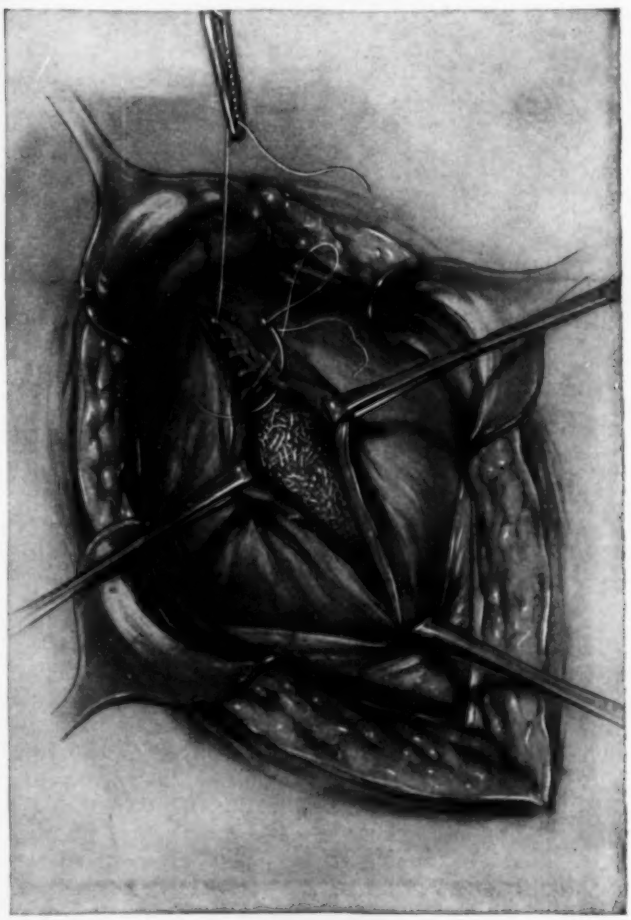

Fig. 8.—Suture of wound: The retractors are replaced. Suturing begins at the bladder end. We use No. 2 twenty-day catgut, taking in half the thickness of the wall in the first row, going down to but not through the mucosa. The gauze is removed later through the vagina.

cations. The technic is based on Sellheim's fourth method, and we have added several features which protect the peritoneal cavity from seepage of lochia and strengthen the scar in the lower uterine segment.

We have given the name laparotrachelotomy to the operation, as this expresses exactly what it is—an incision in the neck of the uterus through the abdomen. It should be noted that this operation is intraperitoneal, and the edges of the peritoneum are not sewed together

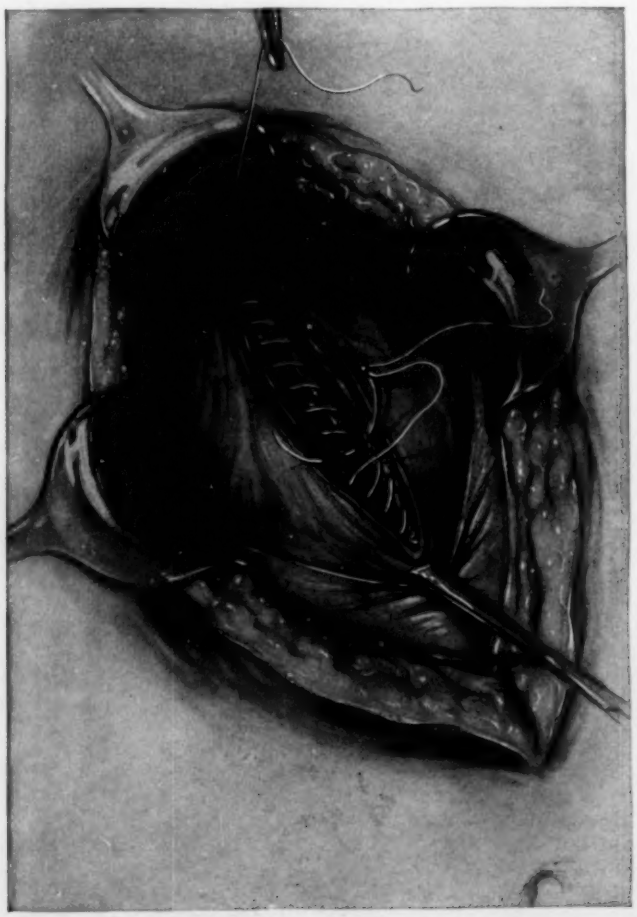

Fig. 9.—Second row of sutures: At the upper end of the incision the suture is locked; then returning, the other half of the wall is sutured, the end being secured with the first knot. We often make this row interrupted sutures.

as in the Frank and the Fromme-Veit-Hirst technic. Vaginal cesarean section would be called colpotrachelotomy, and the old classic section laparohysterotomy.

TECHNIC

The operation is much simpler if the patient has been in strong labor for a long time. Uterine action stretches the lower uterine segment and draws the cervix away from the bladder. We have done laparotrachelotomy in the seventh month of pregnancy before pains had started, but it is technically more difficult. A Pfannenstiel incision may be used, but we usually make the cut in the middle line, and it need be only 14 cm. long, beginning at the pubis. We make the fascial incision 1.5 cm. to the left of the linea alba, and then draw the rectus muscle from its sheath at the middle line and open the peritoneum again extramedially. Thus, the rectus muscle is mortised into the fascia when the wound is closed, preventing hernia. The bladder is usually high on the abdominal wall. It is pushed down and to the right. The lower uterine segment is exposed with retractors, and a cross cut made in the peritoneum, about 2 cm. below its firm attachment to the uterus. This is a grayish line, or seam, which delimits the lower uterine segment from the body of the uterus. The cut extends in a slightly curvilinear direction, 5 cm. on each side of the middle. The lower flap of the peritoneum is reflected downward, carrying with it the bladder. The upper flap is pushed upward to a point which delimits the upper end of the intended uterine opening.

This method of technic was used by us several years before Opitz and Beck published their descriptions of the operation. After the bladder has been pushed down far enough to expose a surface sufficient for the child's delivery, the upper and lower poles of the area of incision are steadied by Allis forceps, and the hook knife is passed into the uterus, alongside the upper Allis forceps, and brought out at the lower end just at the edge of the bladder. With a slow, gentle, sawing motion, the thin uterine wall is cut. The blood and liquor amnii are sucked out of the field by means of a vacuum pump. The face of the child is now pulled into the wound by means of a finger introduced into its mouth, and forceps are applied, or the head may sometimes be expressed by means of pressure applied in the flanks, or the occiput is led into the aperture and forceps applied in the usual way. Hurry should always be avoided. There is no occasion for it. Pituitary extract is given hypodermically. Ergot was given just after the anesthetic was started.

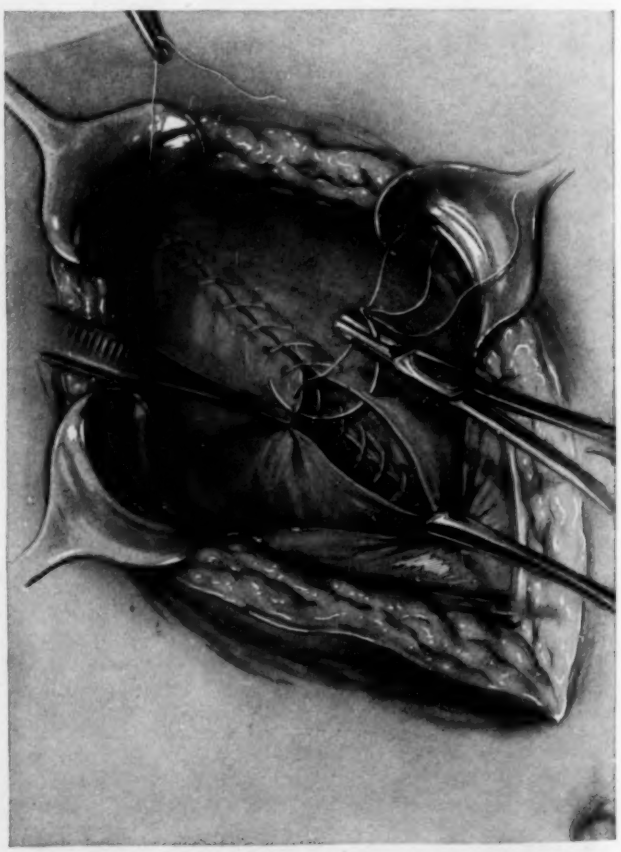

Fig. 10.—The important fascial suture: Now the fascia over the lower uterine segment is reunited with a special continuous suture so placed that the edge of one side overlaps that on the other 0.5 cm. Occasionally a superficial vein bleeds and requires a mattress suture (No. 0 plain catgut). The bladder end of the suture is kept as a tractor to lift the tissues out of the depth of the wound until all oozing has been perfectly stanched.

The placenta usually separates and appears in the wound if one waits long enough, but we usually wait only three or four minutes, employing this time in

grasping the edges of the uterine wound with tongue forceps to stop the bleeding from the uterine sinuses (which is usually not disturbing) and to lift them up for suture. The placenta may be expressed by the method of Credé or removed manually. If the operation is done under local anesthesia, the placenta is removed by gentle traction on the cord. Then the uterus is carefully wiped smooth with a dry lap sponge, packed lightly with a narrow gauze strip, which is led into the vagina by means of a shuttle (removed from five to eight hours later), and now the lower uterine segment is carefully sewed up. We use No. 2 twenty day catgut, beginning near the bladder, taking in half the thickness of the wall in the first row, going down to but not through the mucosa. At the upper end of the wound, the suture is locked; then returning, the other half of the wall is sutured, the end being tied to the first knot.

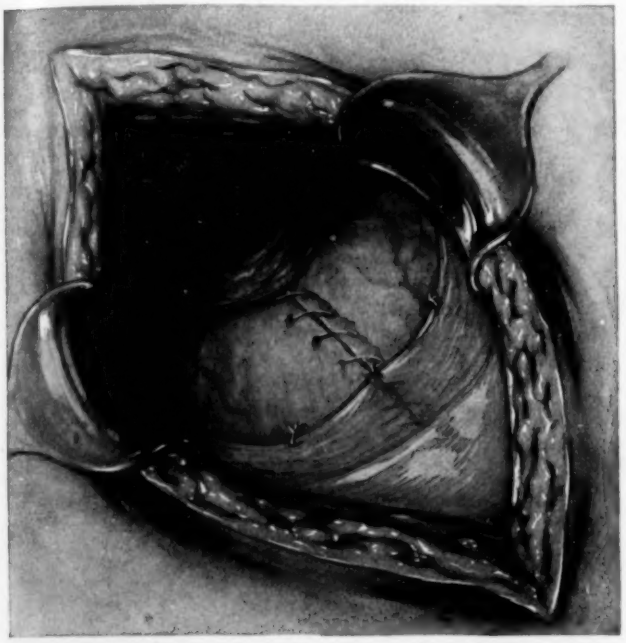

Fig. 11.—Anchoring the upper flap: Now the upper flap of peritoneum is pulled down over the fascia and fastened with a few small single stitches.

Now the fascia over the lower uterine segment is reunited with a special row of catgut sutures, which are so placed that the edge of one side overlaps that on the other 0.5 cm. This is our second contribution to this operation, and the importance of this fascial layer has been proved by the event. Now the upper flap of peritoneum is pulled down over the fascia and fastened down with two or three stitches, and finally the lower flap, carrying the bladder, is pulled up over the upper flap, and closed with a continuous suture. Of late years in clean cases we have not overlapped the peritoneum, as we found a shortage of this membrane in subsequent sections. Occasionally, an oozing superficial vein requires a fine suture. Before the peritoneum is sewed, all bleeding must be stopped.

The peritoneal toilet is very simple, as blood will be found only in the culdesacs below the round ligaments. If the peritoneal cavity has been walled off with lap sponges, even this soiling of the field may be avoided. Usually the intestines and the omentum are not seen at all.

One should remember that opening the parturient canal through the peritoneal cavity is analogous to opening the intestine, which is another hollow abdominal viscus, and that the same surgical rules apply to the two operations.

We used ether for 267 of the cases, local anesthesia for sixty, ethylene and nitrous oxid and oxygen for the remainder. The steps of the operation during local anesthesia are of course the same, but the technic must be modified according to the usual rules for operating with procain. Since we have perfected the infiltration method and have thus abolished the danger of pneumonia and other pulmonary postoperative complications, we feel justified in still further extending the indications for the abdominal delivery. Nevertheless, the extremely conservative practice of the Chicago Lying-in Hospital is shown by the relative fewness of our sections.

In the last 25,681 deliveries there have been 482 cesarean sections, or one in fifty-three cases. Bill of Cleveland gives his proportions one in sixteen; Potter of Buffalo, one in fourteen; Danforth of Evanston, one in thirty-one; Williams of Baltimore, one in thirty-nine.

CONCLUSION

In this paper I do not wish to discuss the relative merits of the low, cervical, intraperitoneal cesarean section (laparotrachelotomy) as compared with the true extraperitoneal operations of Küstner, Latzko, Asa B. Davis (the gastro-elytrotomy of Ritgen-Baudelocque-Thomas), but I wish to present and to urge on the profession the cervical approach to the parturient canal, feeling that the results in the saving of human life will more than compensate for the greater effort in learning the technic and the greater expenditure of time and effort in its execution.

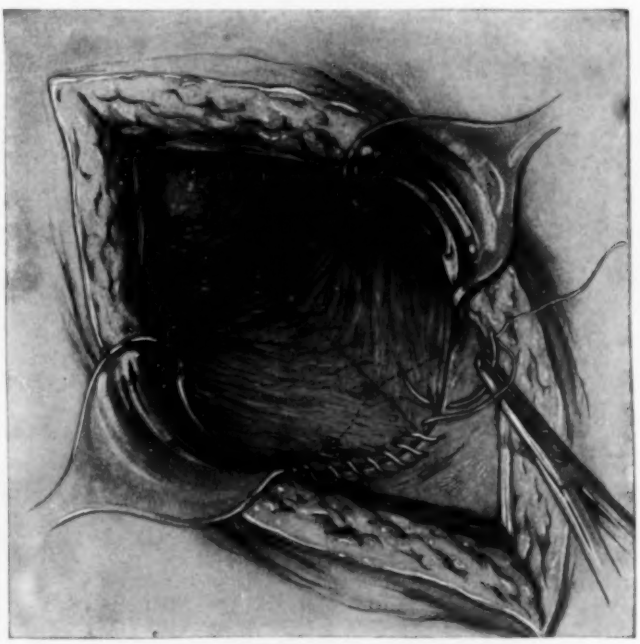

Fig. 12.—Finally the bladder flap is raised up and sewed with a continuous No. 1 twenty-day catgut, the knots being buried under the peritoneum, leaving a hardly visible line of suture which the bladder, when filled, completely hides. In clean cases the two peritoneal flaps are not overlapped but reunited where cut. The peritoneal toilet is very simple. Usually intestines and omentum have not been seen. Drainage is not needed.

Any surgeon who is capable of doing a cholecystectomy is capable of doing laparotrachelotomy, and after he has done one or two he will be convinced of the simplicity of its performance, the ease with which complications are managed, and the rapidity of the recovery.[3]

426 East Fifty-First Street.

THE TRANSFORMATION OF WHITE BLOOD CELLS

INTO CLASMATOCYTES (MACROPHAGES), EPITHELIOID CELLS, AND GIANT CELLS *

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AND
WARREN H. LEWIS, M.D.
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The great divergence of opinion as to the origin of the clasmatocytes, epithelioid cells, and giant cells of the Langhans type can be ascribed either to inadequate technic or to the possibility of a varied origin. The simple technic applied first by Mrs. Lewis to mammalian (man, dog, cat, mouse, guinea-pig) and avian (chicken) blood and by both of us to the blood of elasmobranchs, bony fishes, amphibia and reptiles enables one to prove beyond question that the white blood cells, in all the various forms studied, can give rise to clasmatocytes, epithelioid cells, and giant cells of the Langhans type. The method is so simple that any competent investigator can repeat our observations. Small drops of whole blood, taken under aseptic conditions from the heart or periphery, made into ordinary hanging drops and kept at suitable temperatures, contain, after a few days (from two to twenty-one), varying numbers of hypertrophied and highly phagocytic cells, and all transitions between them and the large mononuclear cells.

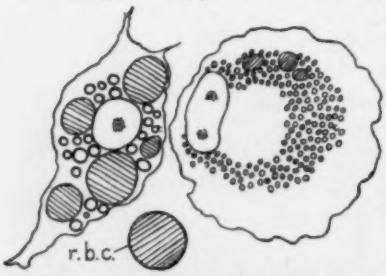

Fig. 1.—Transformed blood cells from seven-day culture of human blood; macrophage with ingested red blood cells and fat globules; epithelioid cell with central area intermediate zone of fat globules, and remnants of three ingested red blood cells; × 960.

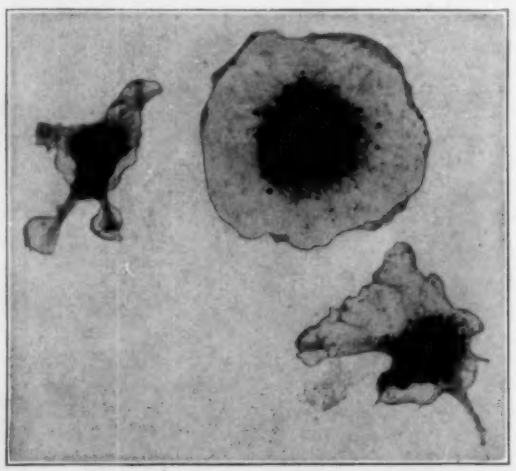

Fig. 2.—Epithelioid cells from sixteen-day culture of lizard's blood; × 480.

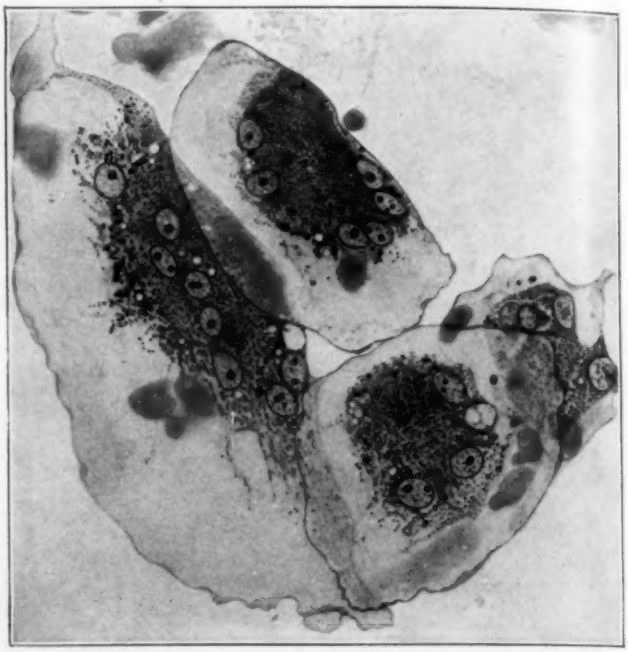

Fig. 3.—Giant cells from twelve-day culture of lizard's blood; × 480.

Some of these hypertrophied cells are precisely like clasmatocytes, and contain from one to many ingested red blood corpuscles in various stages of digestion, a considerable amount of ingested or partly digested débris in the form of granules, which may or may not be surrounded by vacuoles and varying numbers of fat globules. The granules, vacuoles and partly digested material have a marked affinity for neutral red. These cells often become many times larger than the largest mononuclear of the fresh blood, and have all the characteristics of clasmatocytes, found so abundantly in the tissue spaces of normal animals.

Typical epithelioid cells are usually numerous, vary greatly in size, and are often many times larger than the normal mononuclears. They are characterized by a large granular central area, with a marked affinity for neutral red which is often surrounded by varying numbers of fat globules. These cells are exactly similar to the epithelioid cells of tuberculous lesions. The similarity is most striking in the living state with neutral red.

All intermediate stages between the typical clasmatocyte, with its irregularly distributed granules, vacuoles, ingested material and fat globules, and the typical epithelioid cell, with its centrally and radially arranged granules about the centrosphere, are abundant. There is every indication that the clasmatocytes and epithelioid cells are merely different functional states of the same cell. In dealing with such highly phagocytic cells, account must be taken of certain variables, such as the number, size, condition and distribution within the cell of ingested materials; the number, size and

3. In order to introduce this method of section to a wider circle and thus to disseminate the benefits of this operation, I have, with the cooperation of THE JOURNAL, secured reprints with the illustrations shown here all printed on one sheet, making a large chart of twelve plates showing the main steps of the operation, with full descriptive legends. The author will send a copy to any one requesting it. The chart is suitable for framing, and if the surgeon will have this before him as a guide in the performance of his first laparotrachelotomy, he will readily conquer the small difficulties of the operation and soon become an enthusiastic convert to it. After this he will wish to demonstrate the operation at his county medical society, and he may obtain for this purpose, at actual cost, lantern slides reproducing these plates.

* From the Mount Desert Island Biological Laboratory and the Department of Embryology, Carnegie Institution of Washington.

distribution of granules and vacuoles with an affinity for neutral red; the number, size and distribution of fat globules, and the great variations in the size of the central area that surrounds the centrosphere. In the clasmatocytes, the central area is very small and usually obscured by the marked accumulation of ingested material, granules, vacuoles and fat globules; but, in cells that are spread out on the cover glass, a small central area is sometimes visible. The indications are that the epithelioid cells may arise either directly from the large mononuclears or from the clasmatocytes. In the latter case, as the large ingested masses within the clasmatocyte become digested, the resulting débris in the form of granules accumulates about the centrosphere and thus forms the gradually increasing central area so characteristic of epithelioid cells.

Giant cells of the Langhans type are common in some of the blood cultures, and are of exactly the same character as the epithelioid cells. They contain from two to many nuclei arranged in the characteristic manner about the large central area. There is no evidence whatever that these cells arise by fusion of mononuclear epithelioid cells. They probably arise by division of the nuclei without division of the cytoplasm.

The transformations that occur in the stagnant hanging drop blood cultures suggest that in the spleen, where the blood current is sluggish, a somewhat similar condition prevails and is responsible for the fact that there a similar phagocytosis of injured red blood cells by leukocytes takes place, with resulting clasmatocyte formation. Again, since blood cells that wander out into the tissue spaces encounter conditions somewhat analogous to those in the hanging drop, it is reasonable to conclude that there they change into clasmatocytes and, under certain conditions, into epithelioid cells and giant cells.

202 Hawthorn Road.

THE USE OF A MEAL UNIT DIET IN DIABETES *

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During the last two years, several excellent methods have been described for estimating the proper diets for diabetic patients, to use either with or without insulin. Wilder [1] has devised some very ingenious charts for estimating optimal food mixtures; Kellogg [2] has simplified greatly the calculation of diets for patients, and several diets have been proposed based on slight modifications of Woodyatt's well known formula. These methods have been especially helpful in hospital practice, and their successful employment proves their great value.

During the last year, we have been using a very simple formula for estimating diets. Patients who have employed this formula remember their diets well and find them easy to calculate. The method not only permits of rapid calculation, but also allows a certain standardization of diet, which is time-saving to the dietitian while the patient is in the hospital, and also to the patient when he returns to his home.

The principle of this diet is based on giving the patient 30 calories per kilogram of body weight and giving carbohydrate, protein and fat in the ratio of 1:2:3. In making the calculation, the patient's weight in kilograms is multiplied by 30. This gives the total calories necessary for basal maintenance diet. One tenth of this amount of calories is given in carbohydrate, and a division of this figure by 4 gives the grams of carbohydrate necessary. Twice this amount is given in protein and three times this amount in fat. An example of this calculation is as follows:

The patient weighs 70 kg.
$70 \times 30 = 2{,}100$, total calories daily.
$2{,}100 \div 10 = 210$ calories in carbohydrates.
$210 \div 4 = 52$ gm. of carbohydrates.

The basal maintenance diet for this patient is 52 gm. of carbohydrate, 104 gm. of protein and 156 gm. of fat, daily. A still simpler method of arriving at this calculation is to divide the weight in pounds by 3, which gives approximately the grams of carbohydrate necessary. Thus, a patient weighing 70 kg. weighs 154 pounds. Dividing 154 pounds by 3, we get 51, the grams of carbohydrate necessary.

USE OF THE DIET

This method of calculation also permits the use to some extent of standardized diets. We have found in hospital practice, and also in the home, that considerable labor is often required to work out the diet for the entire day. To simplify this problem, instead of using the day's rations as a unit, we have used an individual meal as a unit. A series of breakfasts, dinners and suppers have been used varying from 5 to 50 gm. of carbohydrate per meal, with protein and fat in the ratio of 1:2:3. If a patient is on a diet of 30 gm. of carbohydrate a day, he may take the greater amount of this at any one meal, or may distribute it evenly throughout the day. Thus, he may take 10 gm. at breakfast, 10 gm. at dinner and 10 gm. at supper, or he may take 15 gm. at breakfast, 10 gm. at dinner and 5 gm. at supper. This arrangement of diets allows much flexibility and gives a great variety to the dietary. The patient is instructed to make any combination of meals that he likes, as long as the sum total of carbohydrate does not exceed the given figure. With ten such meals on his diet list, the patient has a hundred different menus provided.

If the patient is taking insulin, the daily dose is divided so that the greatest amount is taken before the meal containing the largest quantity of carbohydrate. In case the patient is overweight, the diet is calculated for his ideal instead of for his actual weight.

It is realized, of course, that the 1:2:3 diet as outlined, and the meal unit system, will not be applicable in every case of diabetes. There are a certain number of cases of severe diabetes, particularly juvenile cases, in which more intricate adjustments of diet will be required. For some very obese diabetic patients, it is desirable to reduce the amount of fat. With the great majority of diabetic patients, however, the foregoing plan is quite workable, as we have found in a year's employment of this method. The diet is well within the limits of safety according to the Schaffer-Woodyatt formula. We have found it a great help in our hospital practice, and patients who have taken their diet lists home have found that it greatly simplified their calculations.

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* From the Department of Internal Medicine, University of Kansas School of Medicine.

1. Wilder, R. M.: Optimal Food Mixtures for Diabetic Patients, J. A. M. A. **78**: 1878-1884 (June 17) 1922.
2. Kellogg, J. H.: A Simple Method of Approximating the Proper Ration for a Diabetic Patient, J. A. M. A. **81**: 823-826 (Sept. 8) 1923.

PRODUCTION OF LIVER NECROSIS

BY TETRACHLORPHENOLPHTHALEIN AND TETRABROMPHENOLPHTHALEIN *

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The tetrahalogenphenolphthaleins bid fair to become important substances in medicine. The chlorin compound has been introduced in a liver function test, the bromin compound is used in visualizing the gallbladder for roentgen-ray diagnosis, and the iodin compound has been in use for some years as a local antiseptic.

All the earlier workers found these substances to be practically nontoxic. Only Graham and Cole,[1] in their recent studies on roentgen-ray visualization of the gallbladder, obtained any toxic effects with large doses administered intravenously. We have seen no accounts of lesions produced by these compounds.

We here report briefly on experiments undertaken primarily to determine the upper safe limits of dosage. A detailed description of the findings will be published later. Fifteen rabbits and seven dogs were used. Five per cent. solutions were injected intravenously at a slow rate.

The results with tetrachlorphenolphthalein and tetrabromphenolphthalein were practically identical. With dogs and rabbits, except for variations due probably to differences in susceptibility, they were in general as follows:

Doses of about 0.1 gm. per kilogram of body weight produced no symptoms or lesions except in one rabbit, and the substances injected were not present in the urine.

Doses of about 0.2 gm. per kilogram produced some weakness, and the substances were usually present in the urine. Lesions in the liver were minimal or absent.

Doses of from 0.3 to 0.4 gm. per kilogram made the animals very sick at once. They showed great weakness, even paralysis of the hind legs, staggering, vomiting (in dogs only) and repeated bowel evacuations, and died in from five to eight hours. One rabbit died immediately. Their urine showed large amounts of the injected substances, albumin, casts and in some instances hemoglobin. Necropsies showed remarkably extensive degeneration amounting almost to necrosis of the liver lobules, and general disruption of the liver architecture, with intense congestion and hemorrhage in many necrotic areas. There were lesions of the kidneys and spleen. In the case of the more deeply colored chlor compound, the injected substance was demonstrated in all the tissues of the body. (The characteristic purple was brought out by application of ammonia.)

Doses of from 0.4 to 0.5 gm. per kilogram killed the rabbits at once or within fifteen minutes, with acute convulsive symptoms. (No dogs received these doses.) The animals died from respiratory failure, the heart continuing to beat for several minutes. At necropsy, performed immediately, their livers showed profound congestion, and microscopically acute degeneration of the liver cells except in one instance. Unlike the animals that survived from five to eight hours, these showed preservation of the general liver architecture. Extensive degeneration of the liver produced in fifteen minutes is remarkable.

A peculiar feature was the lack of gradation between toxic and nontoxic doses. Either the animals showed almost no lesions or the lesions were extreme.

It will be noted that the doses needed to produce severe symptoms and liver lesions were enormously larger than those used in the tetrachlorphenolphthalein test for liver function (0.005 gm. per kilogram). While the amount of tetrabromphenolphthalein used for gallbladder visualization (0.1 gm. per kilogram) is also safely below the toxic dose, the margin is not so large, and suggests the necessity of caution in cases in which the liver parenchyma is already damaged by disease.

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* From the Pathological Laboratory, Mount Sinai Hospital.

1. Graham, E. A., and Cole, W. H.: Roentgenologic Examination of Gallbladder, New Method Utilizing Intravenous Injection of Tetrabromphenolphthalein, J. A. M. A. **82**: 613 (Feb. 23) 1924.

HEMOCHROMATOSIS

REPORT AND DISCUSSION OF A CASE *

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Our object is to report and discuss a clinical case of hemochromatosis diagnosed during life and the diagnosis confirmed by necropsy.

DEFINITION

Hemochromatosis, diabète bronzé, cirrhose pigmentaire and general hemochromatosis are terms used synonymously in the literature.

Hemochromatosis may be defined as a chronic disease, occurring in adults, especially attacking males, and is characterized by a bronzed, iron-containing pigmentation of the skin, an iron-containing pigment deposit in the viscera, cirrhosis of the liver, usually hypertrophic, a more or less pronounced hyperglycemia associated or not with glycosuria, terminating fatally, and in the end stages accompanied with marked cachexia and acidosis.

INCIDENCE

The rarity of occurrence is indicated by the fact that we have been able to find only eighty-four reported cases. Futcher [1] found three among 106,000 medical admissions to Johns Hopkins Hospital. There are noted but four cases among 5,000 recent necropsies at Bellevue Hospital, as stated by Blanton and Healy.[2] There is recorded in the literature only one authentic case in a woman, that of Blue Mary, reported by Abbott.[3]

REPORT OF CASE

History.—A man, aged 37, single, painter and janitor, entered the hospital April 9, 1921, complaining of weakness, distress and fulness in the abdomen, loss of weight, anorexia, thirst, constipation and pain in the rectum. The patient's mother lived to the age of 60, and the cause of her death was unknown. The father had died of carcinoma of stomach at 62. One sister had died of carcinoma of the bladder, and one of pneumonia. Two brothers had died of diphtheria.

* From the Diagnostic Medical Service, the Grace Hospital.

1. Futcher, T. B.: Hemochromatosis with Diabetes Mellitus, Am. J. M. Sc. **133**: 78 (Jan.) 1907.
2. Blanton, W. B., and Healy, W.: Hemochromatosis: Report of Four Cases, Arch. Int. Med. **27**: 406 (April) 1921.
3. Abbott, Maude E.: Pigmentation Cirrhosis of the Liver in a Case of Hemochromatosis, J. Path. & Bacteriol. **7**: 55 (Dec.) 1900.

One brother had died of diabetes mellitus at 41. Two sisters and one brother were living and in good health.

The patient had had malaria in 1910; rheumatism of two weeks' duration in 1913, and influenza in 1919. He had had gonorrhea and a chancre. He used alcohol and tobacco freely.

The illness dated rather suddenly from some time in March, 1921, when the patient noticed a feeling of fulness and distress in the upper abdomen. This he attributed to some medicine he had taken for his bowels at a druggist's suggestion. The discomfort in the abdomen was not pain and seemed to be independent of food intake. Nor was it accompanied with nausea or vomiting. He soon noticed more discomfort, lost his appetite and became quite weak. By the latter part of March, he was unable to work because of discomfort in the abdomen when bending over; increasing weakness; dizziness, and shortness of breath on slight exertion. His loss of weight was quite marked—20 pounds (19 kg.) in about four weeks. The patient noticed early a dryness in the skin in spite of the fact that he was always thirsty and drank quantities of water. The bowels had been constipated, and for several days he had experienced great pain in the rectum on defecation.

Examination.—The patient was in no apparent pain. The hair was prematurely gray. The capillaries over the nose were prominent. A slight icterus was noticed, more evident in the conjunctiva and finger nails.

The skin of the face was dry and stretched-looking; of the arms, dry and scaly; of the trunk, normal; of the hips, dry and scaly, and over the tibia, peppered with spots (petechiae).

The eyes, nose, throat and neck were negative to examination. The chest was normal except for lagging of the lower right portion, anteriorly. The heart was normal in size, shape and position. The sounds were somewhat muffled. No murmur was heard. There was an occasional premature beat. The rate was 80 a minute. The blood pressure was 110 systolic and 70 diastolic.

There was a rounded prominence in the upper abdomen, extending from the costal border to the umbilicus. No veins were visible on the abdominal wall, and there was no peristalsis visible. A smooth, non-nodular mass was easily palpable in the upper right part of the abdomen. This was evidently the liver, palpable four finger breadths below the costal margin. The splenic border also was palpable. An old operative scar from a bubo was seen in the right groin. No ascites was demonstrated. There was present a perirectal abscess, which was draining. No scars were observed on the penis. No hemorrhoids or varicose veins were seen, and there was no edema of the legs. The motor reflexes were all found normal.

The blood Wassermann reaction was negative. The urine output was 2,000 c.c. in twenty-four hours; it was acid; the specific gravity was 1.044; it was negative for albumin and sugar; there were a few hyaline casts; no pus or red cells were seen.

Our findings at this time were: a slight icterus; enlarged liver and spleen; progressive weakness with loss of weight; a history of alcoholism and of a chancre. On these findings, a working diagnosis of hypertrophic cirrhosis of the liver of unknown origin was made, with the request that the patient be kept under observation for a longer period. However, he insisted on leaving the hospital, and was discharged on the fifth day.

Second Admission.—He was readmitted, May 19, thirty-five days after his previous discharge. During this interval he had received three injections of arsphenamin at ten-day intervals, with no benefit. The changes in the patient were marked. He was in a state of mild stupor, extremely weak, almost cachetic, and the breath had a strong odor of acetone. The skin, which at first was dry and slightly icteric, was now very striking in appearance. The skin of the face was grayish-blue and dusky. No icterus could be seen. The skin over the exposed surfaces of the arms and legs was dusky and grayish-blue with small elevated, brownish petechiae. This dusky-blue appearance was not uniform in intensity or distribution. A very fine pigmentation gave this bluish appearance to the skin. This pigmentation was also visible in the skin over the upper chest and neck. There was no pigmentation of the mucous membrane. The liver and spleen were still palpable. The urine now contained sugar, 4 per cent. The specific gravity varied from 1.010 to 1.040. Acetone and diacetic acid were present. Intracellular hemosiderin granules were demonstrated in the urinary sediment.

Comparing the patient's condition now with that at his former admission, we noticed marked increase in weakness and loss of weight, to the point of cachexia. The liver and spleen appeared to be about the same, but two new groups of symptoms had appeared: pigmentation, and glycosuria with acidosis.

Cirrhosis of the liver did not seem to explain this picture satisfactorily.

Further study showed that the blood sugar was 180 mg. per hundred cubic centimeters of blood. The carbon dioxid was 48 per cent. The blood nonprotein nitrogen was 29.7 mg. per hundred cubic centimeters of blood; creatinin, 1.9 mg., and uric acid 2.3 mg. The blood count showed: red cells, 3,350,000; white cells, 4,050; with hemoglobin, 89 per cent. (Sahli). The differential count was normal. The red cells appeared normal in size, shape and tinctorial properties. The blood platelet count was 49,600. Reticulated red cells were found, 1 in 300. The fragility test of red cells showed: complete, 0.325, and partial, 0.475. A section of skin from a pigmented area showed hemosiderin granules.

A diagnosis of hemochromatosis was made.

DIFFERENTIAL DIAGNOSIS

The difficulty of diagnosis in this disease, because of its similarity to other diseases, notably cirrhosis of the liver, diabetes mellitus, Addison's disease, arsenical poisoning, argyria and visceral syphilis, has delayed its recognition in most instances until necropsy.

In our case the presence of a definitely demonstrable enlargement of the liver, marked loss of weight, and icterus was suggestive of primary liver disease. However, the acuteness of the course, the absence of signs of portal obstruction, the presence of glycosuria and the pigmentation did not permit a satisfactory explanation on a liver basis alone.

The evidence of diabetes mellitus appeared very late and therefore did not at first enter as a diagnostic consideration.

Arsenical poisoning was seriously considered because of the rapid progress of the disease after the administration of arsenic, and because of the evidence of renal, pancreatic and liver disturbances together with pigmentation. The continued course of the disease after the cessation of the administration of arsenic, and the increasing evidences of the diabetic complex, ruled out arsenical poisoning.

Addison's disease, which, judging from the literature, has been the diagnosis previous to necropsy in most cases, was considered. The absence of pigmentation, in the mucous membranes, and of gastro-intestinal upsets, and the presence of cachexia, together with a normal blood pressure, justified us in eliminating this disease.

As there was no history of silver poisoning, we did not seriously consider argyria.

A negative Wassermann reaction and failure to respond to antisyphilitic treatment made us give up the consideration of syphilis.

The patient was admitted in a state of ketosis, had a rather rapid course of severe diabetes, and died in coma on the twenty-fifth day.

SUMMARY

To summarize the important clinical observations that permitted of the diagnosis of hemochromatosis during life, there was: (1) the enlarged liver; (2) the

diffuse pigmentation of the skin; (3) the demonstration of hemosiderin in the skin; (4) the demonstration of hemosiderin in the urine; (5) hyperglycemia; (6) glycosuria; (7) acidosis, and (8) cachexia.

10 Peterboro Street.

A METHOD OF RECOGNIZING SCARLET FEVER STREPTOCOCCI

BY MEANS OF SPECIFIC TOXIN PRODUCTION *

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In 1923,[1] we were able to establish the etiology of scarlet fever by inoculation experiments in which the hemolytic streptococci used fulfilled all the requirements of Koch's laws. Up to that time, there had been no convincing evidence that hemolytic streptococci played any but a secondary rôle in the disease.

It had been known that hemolytic streptococci of one kind or another may be almost constantly found in scarlet fever. But there were no morphologic, cultural or immunologic characteristics by which the streptococci of scarlet fever origin could be differentiated from hemolytic streptococci associated with other pathologic processes. Experimental scarlet fever had not been produced, and the lasting immunity usually conferred by one attack of the disease was not considered characteristic of streptococcus infections.

After the production of experimental scarlet fever, we were able to explain the lasting immunity by the discovery of the specific toxin.[2] The streptococci, growing in the throat, produce this toxin, which is absorbed into the blood stream, and causes the characteristic symptoms of scarlet fever, including the rash. Recovery and subsequent immunity are due to the production of an antitoxin capable of neutralizing the toxin.

Morphologically, the streptococci of scarlet fever are not distinguishable from streptococci of other sources. They have no characteristic staining reactions, and the appearance of the colonies on blood agar plates is too variable to furnish a means of differentiation. Streptococci of the same cultural type cannot be demonstrated in all cases of scarlet fever, and the two strains that produced the disease experimentally in man differed in their effect on mannite.

Beginning with the work of Moser and Pirquet [3] in 1902, and the results reported by Rossiwall and Schick [4] in 1905, many observations have been made on the agglutination of streptococci in relation to scarlet fever. It has occasionally happened that investigators have concluded, from their results in a small series, that they had found a specific agglutination of scarlet fever streptococci. But, on further work, they have modified their conclusions.

The earlier observers studied the agglutination of streptococci with Moser's serum. This serum was produced for therapeutic use in scarlet fever by immunizing horses with living cultures of streptococci isolated from fatal cases. They found that many of the streptococci associated with scarlet fever are agglutinated by Moser's serum.

In 1906, Ruediger [5] reported agglutination tests with the serum of a sheep that he had immunized by intravenous injections of a streptococcus of scarlet fever origin. He found that this serum agglutinated most of the streptococci isolated from scarlet fever.

In 1920, Tunnicliff,[6] and Dochez and Bliss [7] concluded that the hemolytic streptococci found in scarlet fever may be distinguished from others by means of the agglutination test. Dochez later reported that he obtained agglutination of the streptococci in only 75 to 80 per cent. of scarlet fever cases. His [8] last figures are in accord with the results reported by Moser and Pirquet in 1902; by Rossiwall and Schick in 1905, and by Ruediger in 1906. Though Dochez still speaks of a specific agglutination, his own results indicate that the agglutination test is not a reliable means of identifying scarlet fever streptococci.

A study of the toxin production of hemolytic streptococci affords a method of recognizing those organisms that are capable of producing scarlet fever.

The organism is isolated in pure culture, and grown in plain broth, containing 1 per cent. sterile, defibrinated sheep's blood. We have been using broth prepared with Witte's peptone, 1 per cent., and Liebig's meat extract, 0.3 per cent. Most scarlet fever streptococci produce toxin in plain broth without blood, but a somewhat stronger toxin is obtained by the addition of a small amount of blood.

After incubating for from two to four days, the broth culture is filtered through filter paper and then passed through a Berkefeld W filter. The sterility of the filtrate is determined by culture, and it is kept in the refrigerator.

After its sterility is determined, a part of the filtrate is diluted 1:500 in sterile physiologic sodium chlorid solution. One cubic centimeter of this dilution is mixed with an equal amount of salt solution, and another 1 c.c. is mixed with 1 c.c. of sterile convalescent scarlet fever serum. Both mixtures are incubated one hour, and skin tests are made on a person known to be susceptible to scarlet fever, using 0.1 c.c. of each mixture. At the same time, a control test is made with 0.1 c.c. of the standardized skin test solution used to determine susceptibility to scarlet fever. The reactions are observed at the end of twenty-four hours. The control reaction with the skin test solution should be positive. If the mixture of filtrate with salt solution gives a positive reaction, while the filtrate-convalescent serum mixture gives a negative result, it may be concluded that the organism under consideration is capable of producing a toxin that is neutralized by convalescent scarlet fever serum, and is therefore a scarlet fever streptococcus.

While the toxin production of any one strain remains fairly constant, there is considerable variation in the strength of the toxin produced by different strains of scarlet fever streptococci. A toxin will occasionally be found that gives a stronger reaction

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* From the John McCormick Institute for Infectious Diseases.

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2. Dick, G. F., and Dick, G. H.: A Skin Test for Susceptibility to Scarlet Fever, J. A. M. A. **82**: 265 (Jan. 26) 1924; Scarlet Fever Toxin in Preventive Immunization, ibid. **82**: 544 (Feb. 16) 1924.
3. Moser, P.: Wien. klin. Wchnschr. **15**: 1053, 1902. Moser, S., and Pirquet, C.: Ibid. **15**: 1086, 1902.
4. Rossiwall, E., and Schick, B.: Wien. klin. Wchnschr. **18**: 3, 1905.
5. Ruediger, Gustav: The Streptococci from Scarlatinal and Normal Throats and from Other Sources, J. Infect. Dis. **3**: 755, 1906.
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7. Dochez, A. R., and Bliss, W. P.: Biologic Study of Hemolytic Streptococci from Throats of Patients Suffering from Scarlet Fever, abstr. J. A. M. A. **74**: 1600 (June 5) 1920.
8. Dochez, A. R.: Relationship of Streptococcus Hemolyticus to Scarlet Fever, abstr. J. A. M. A. **82**: 1641 (May) 1924. Dochez, A. R., and Stevens, J. W.: Proc. Soc. Exper. Biol. & Med. **21**: 29, 1923.

than the control skin test solution, and it may be necessary to make a higher dilution of the filtrate to obtain complete neutralization with convalescent serum.

Convalescent serums vary in their antitoxin content, and the weaker serums frequently release the toxin after twenty-four hours in the skin; so that the test with the filtrate-serum mixture that is negative at the end of twenty-four hours may be positive at the end of forty-eight hours.

If the test with the filtrate-salt solution mixture is negative, similar tests are made with lower dilutions of the filtrate in salt solution, such as 1:50 and 1:5, and finally with the undiluted filtrate, before it is concluded that the organism is not capable of producing the specific toxin of scarlet fever.

Concentrated scarlet fever antitoxin [9] may be substituted for the convalescent serum in these tests. If the antitoxin is used, a control test should be made with equal amounts of the antitoxin and salt solution to exclude reactions due to horse serum.

In uncomplicated cases of scarlet fever, the hemolytic streptococci usually disappear from the nose and throat during convalescence; but that persons who have had scarlet fever may harbor the specific streptococcus after apparent recovery is shown by the fact that organisms which produce scarlet fever toxin have been cultivated from discharges obtained from sinuses, glands and middle ears after the patients have been released from quarantine.

THERAPEUTIC RESULTS WITH CONCENTRATED SCARLET FEVER ANTITOXIN

PRELIMINARY REPORT: PREPARATION, STANDARDIZATION, AND DOSAGE OF THE ANTITOXIN *

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About one year ago, we [1] reported a scarlet fever antitoxin produced by immunizing horses with scarlet fever toxin. The antitoxic serum thus obtained was concentrated by the method commonly employed for the concentration of diphtheria antitoxin.

Up to that time, the serums prepared for the treatment of scarlet fever had been produced by immunizing horses with living cultures of hemolytic streptococci. Since Moser [2] reported his serum, in 1902, many antistreptococcic serums have been prepared, but there has been no reason to believe that any of them are more efficient than the serum described twenty-three years ago.

Moser reported a large series of scarlet fever cases treated with his serum, and two control series: one treated with Marmorek's serum, the other with normal horse serum. There is no doubt that Moser's serum exerted a favorable influence on the temperature, rash and general condition in many cases of scarlet fever.

Since we [3] were able to demonstrate that there is a specific toxin of scarlet fever which is produced by the hemolytic streptococci growing in an artificial medium, it is apparent that the serum-broth cultures used by Moser for immunizing horses contained the specific toxin, and that the resulting serum contained the corresponding antitoxin. The beneficial action of the serum was probably due to its antitoxin content.

The most recently described antistreptococcic serum for use in scarlet fever was reported by Dochez and Sherman [4] in 1924. These investigators injected agar subcutaneously in horses, and after the agar had solidified, inoculated it with living streptococci. They employed this method of inoculation with the idea that the organisms would remain localized; but the streptococci grew through the agar mass, and caused discharging abscesses.

Until 1924, when we described a concentrated scarlet fever antitoxin, no attempt had been made to concentrate any of the antistreptococcic serums for use in scarlet fever. The unconcentrated horse serum had resulted in frequent and severe serum reactions. Because of these reactions, to which some deaths had been attributed, the use of Moser's serum was gradually abandoned. Blake [5] reported that serum reactions occurred in all of his cases treated with the unconcentrated antistreptococcic serum described by Dochez and Sherman.

It is well known that concentrated horse serum causes fewer and less serious reactions than the unconcentrated serum. While it is true that the serum of some horses is less toxic than the serum of others, all unconcentrated horse serums are more toxic than the concentrated serum. The fact that scarlet fever antitoxin may be employed in the concentrated form makes its use in the treatment of scarlet fever practical.

Since an efficient antitoxin, susceptible of concentration, may be readily produced by immunizing horses with sterile scarlet fever toxin, it is no more necessary or desirable to immunize horses with living streptococci to obtain scarlet fever antitoxin than to produce abscesses by injection of living diphtheria bacilli in order to obtain diphtheria antitoxin.

METHOD OF IMMUNIZING HORSES

The following method has been employed for the production of a concentrated scarlet fever antitoxin:

The strains of hemolytic streptococci that caused experimental scarlet fever in human beings yield toxin of practically the same strength in all the different lots, so that it is not necessary to standardize accurately toxin prepared from these strains for immunizing horses.

Flasks of plain broth, containing 1 per cent. sterile, defibrinated sheep's blood, are inoculated with pure cultures of the hemolytic streptococci. Our first horses were immunized with toxin obtained from plain broth cultures; but with a small amount of blood in the broth, the toxin is somewhat stronger. We have used broth prepared with Witte's peptone, 1 per cent., and Liebig's meat extract, 0.3 per cent. After six days' incubation, the cultures are filtered through filter paper until clear, and then passed through a Berkefeld N or W filter. The sterility of the filtrate is determined by culture, and it is kept in the refrigerator. Care must be taken to discard any contaminated flasks before filtration.

The sterile toxin is injected subcutaneously in gradually increasing doses, beginning with 20 c.c., and increasing to

9. Dick, G. F., and Dick, G. H.: A Scarlet Fever Antitoxin, J. A. M. A. **82**: 1246 (April 19) 1924.

* From the John McCormick Institute for Infectious Diseases.

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2. Moser, P.: Ueber die Behandlung des Scharlachs mit einen Scharlachstreptokkenserum, Wien. klin. Wchnschr. **15**: 1053-1055, 1902.

3. Dick, G. F., and Dick, G. H.: Scarlet Fever Toxin in Preventive Immunization, J. A. M. A. **82**: 544 (Feb. 16) 1924.

4. Dochez, A. R., and Sherman, Lillian: Streptococcus Hemolyticus in Scarlet Fever, J. A. M. A. **82**: 542-544 (Feb. 16) 1924.

5. Blake, F. G.: Treatment of Scarlet Fever with Scarlatinal Antistreptococcic Serum, abstr. J. A. M. A. **82**: 1724 (May 24) 1924.

1 liter. The horses are then continued on injections of about 1,000,000 skin test doses of the undiluted toxin every five days. The sterile toxin does not cause abscesses, and the horses remain in good condition.

After preliminary tests show that the horse is producing a good antitoxin, it is bled, and the serum or plasma is concentrated. The concentration is essential, not because the antitoxin content of the unconcentrated serum is not high enough, but to avoid unnecessarily frequent and severe serum reactions.

An amount of scarlet fever toxin corresponding to 1,000 skin test doses is capable of causing general malaise, nausea, vomiting, a fever of 101 F. and a generalized scarlatinal rash in susceptible adults. In other words, 1,000 skin test doses of toxin, if injected without previous immunization, produce a clinical condition resembling a mild attack of scarlet fever. We have taken the amount of antitoxin required to neutralize this dose of toxin as a basis for the standardization of scarlet fever antitoxin. Any antitoxin used should be of such strength that 1 c.c. of the concentrated serum will neutralize 1,000 skin test doses of the toxin. It is possible to obtain serums considerably stronger than this minimum requirement of potency.

Table 1.—*Results in Moderately Severe Cases*

Series	Number of Cases	Deaths	Post-scarlatinal Nephritis, per Cent.	Otitis Media, per Cent.	Mastoiditis and Otitis, per Cent.	Severe Cervical Adenitis, per Cent.
Control....	35	0	8.5	14.2	8.5	2.9
Antitoxin..	21	0	0	4.7	0	0

METHOD OF STANDARDIZING ANTITOXIN

For standardizing, the concentrated antitoxin is diluted 1 to 10 in sterile physiologic sodium chlorid solution. Two cubic centimeters of this diluted antitoxin is mixed with 2 c.c. of a toxin solution. The solution of toxin used is 10 times as strong as the standard skin test solution, so that each cubic centimeter represents 100 skin test doses.

Two control solutions are made, one of equal parts of toxin and salt solution, the other of equal parts of the diluted antitoxin and salt solution.

These three mixtures are incubated one hour. Skin tests are then made with 0.1 c.c. of each mixture in persons with positive to strongly positive skin reactions. Persons with slightly positive reactions are not acceptable for these tests.

On observation, at the end of twenty-four hours, the test made with the antitoxin alone should be negative. If this is positive, the person is sensitive to horse serum, and is not useful for the standardization. The test with the toxin alone should be positive. The test with the toxin-antitoxin mixture will be negative if the antitoxin is sufficiently strong.

At the end of forty-eight hours, another observation is made. The weaker antitoxins, like convalescent serums, may hold the toxin in combination twenty-four hours, but release it after that; so that the toxin-antitoxin test that was negative at the end of twenty-four hours may be found positive at the end of forty-eight hours.

For further standardization, the same tests are repeated with higher dilutions of the antitoxin.

We decided to employ as a therapeutic dose an amount of antitoxin sufficient to neutralize twenty times the quantity of toxin known to produce the characteristic symptoms of scarlet fever in adults. For convenience, we speak of this amount of antitoxin, which neutralizes 20,000 skin test doses, as a therapeutic dose. Each patient in the antitoxin series received one such dose, and in a few of the most severe cases, two therapeutic doses were given.

Since the severity of scarlet fever varies from year to year, and the disease in one locality may be milder than that occurring in another place at the same time, adequate controls are essential for determining the value of any therapeutic measure in scarlet fever.

The control series reported here is composed of cases of scarlet fever that occurred in Chicago at the same time the antitoxin was being employed. In a few of the more severe control cases, convalescent scarlet fever serum was administered. No convalescent serum was given to any patient in the antitoxin series.

In order to make the test of the antitoxin as thorough as possible, it was given in the cases that appeared most severe when they were first seen. The cases that were less severe during the first days of the disease were used as controls. Mild cases were excluded as being of no value in determining the effect of the antitoxin.

The cases classed as moderately severe are those in which the temperature by mouth was at least 102 F., and in which there was a moderate degree of toxemia.

The cases described as severe were characterized by high temperatures with stupor, delirium or severe septic complications.

In comparing the two series, it will be noted that the antitoxin series contained about twice as many severe cases as the control series.

For some years, the death rate from scarlet fever has been comparatively low. To be of much value in the routine treatment of scarlet fever, a serum should have some influence on the frequency of complications.

Table 1 shows that complications and sequelae in the moderately severe cases treated with antitoxin were limited to two cases of otitis media. No complications developed in patients who received antitoxin on the first day of the rash. There were no cases of nephritis following the disease in this series. A glance at the first table shows that the results were not so good in the moderately severe cases treated without antitoxin.

Table 2.—*Results in Severe Cases*

Series	Number of Cases	Per Cent. Deaths	Post-scarlatinal Nephritis, per Cent.	Otitis Media, per Cent.	Mastoiditis and Otitis, per Cent.	Severe Cervical Adenitis, per Cent.
Control....	15	20.0	20.0	20.0	20.0	33.3
Antitoxin..	29	3.4	0	6.8	3.4	3.4

In the severe cases, there was one death in the antitoxin series. This fatality was due to a neglected mastoid infection. This case accounts for the 3.4 per cent. of mastoiditis in the antitoxin series of Table 2. There was one case of marked cervical adenitis in a patient who received the antitoxin on the fifth day of the disease after the cervical glands were involved. None of the patients in the second group who received the antitoxin on the first day of the rash developed any complications or sequelae.

There is a striking contrast between the two series in the frequency of complications and sequelae. This difference may be attributed to the antitoxin; for in all other respects the patients in the two series received the same treatment, and the antitoxin was given to the sickest patients.

In studying these cases, we have been impressed by the frequency of sinus infections in the more severe types of scarlet fever. Sinusitis was diagnosed clinically in 10 per cent. of the moderately severe cases, and in 58 per cent. of the severe cases with marked toxemia or septic complications. In our series, there was evidence that the sinus infection preceded the attack of scarlet fever or was coincident with it. It is possible that absorption of large amounts of toxin from infected sinuses accounts for the severity of such cases.

For the present, we are giving two therapeutic doses of antitoxin to patients with marked toxemia associated with sinusitis, or in severe cases with septic complications. The best results have been obtained when the total amount of antitoxin administered was given in one dose early in the disease. The antitoxin has been injected intramuscularly. In none of the cases reported here was antitoxin given intravenously. Patients who had a history of previous administration of horse serum were given small desensitizing doses before the therapeutic dose was injected.

In early cases, the rash is the most convenient indicator of the action of the antitoxin. If enough antitoxin has been given, the rash will be definitely faded within twenty-four hours. There will be a marked improvement in the general condition of the patient, especially noticeable in the most toxic cases. This improvement is accompanied by a fall in the temperature.

One effect of the antitoxin is the unmasking of such complications as are already present. The removal of the toxic element of the disease makes the recognition and proper treatment of early complications more certain.

The first two temperature charts are typical of moderately severe, uncomplicated scarlet fever. The first chart is taken from the antitoxin series, and shows the abrupt fall in temperature following administration of the antitoxin. The second chart is taken from the control series.

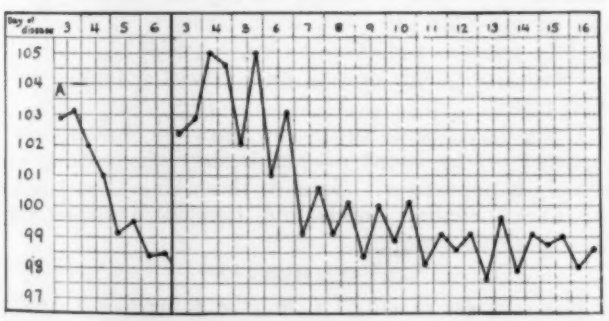

Chart 1.—Temperature in moderately severe cases of scarlet fever: at left, treated with antitoxin; at right, not treated with antitoxin; *A*, antitoxin.

The second set of charts shows the course of the fever in two patients in whom sinus infections preceded the rash. In the first of this pair, there was a drop in temperature following administration of the antitoxin. This fall in temperature is followed by an irregular fever of lower degree due to the sinusitis. A comparison of these charts of patients with sinusitis early in scarlet fever shows that the patient who is relieved of the necessity for combating the toxemia makes a more rapid recovery from complications than the patient who must produce his own antitoxin.

The serum reactions in this series were comparable in every way with the reactions following diphtheria antitoxin. Any reaction to the serum is uncommon in persons who give no history of previous administration of horse serum.

CONCLUSIONS

The results in the antitoxin series and in the control series, reported here, indicate that concentrated scarlet fever antitoxin, injected intramuscularly, blanches the rash, lowers the temperature, and improves the general condition of many scarlet fever patients.

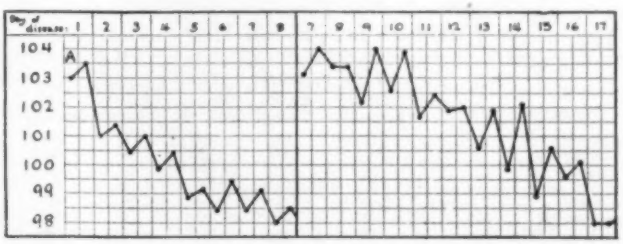

Chart 2.—Temperature in cases of scarlet fever with sinusitis: At left, antitoxin was given (at *A*); the temperature fell to a lower level, and gradually subsided; it became normal on the eighth day of the disease. At right, no antitoxin was given; the temperature became normal on the seventeenth day of the disease.

If the antitoxin is given early in scarlet fever, the course of the disease is shortened and the incidence of complications and sequelae is greatly diminished.

One therapeutic dose, as described above, suffices in early cases of moderate severity.

The concentration of the antitoxic serum and its exact standardization makes its use as a routine measure in the treatment of scarlet fever practical.

DICK TEST AND IMMUNIZATION AGAINST SCARLET FEVER*

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The staff of Mercy Hospital, composed of practically all the physicians and surgeons of Gary, asked the board of education to offer, through its medical inspection department, diphtheria and scarlet fever immunization, and endorsed a program which included an invitation to Drs. George F. and Gladys H. Dick to conduct a clinic on scarlet fever prevention. Accordingly, July 24, 1924, Dr. Gladys Dick administered seventy-seven Dick tests to a selected group, including children from all parts of the city and a number of adults. The following day Dr. George Dick read a paper on their work on scarlet fever, and Dr. Gladys Dick interpreted the tests. The immunization of the susceptible was commenced.

For school work, the Dicks and I worked out the accompanying blank forms, printed on a 3 by 5 card, the front of the card being used for a request from the parent, and the back for the test and immunization record.

We were very conservative in our announcements, and offered the method as the best means afforded for what we hoped would prove a preventive for scarlet fever. Requests for both the Schick and the Dick test came faster than our limited staff was able to care for.

* Read before the joint meeting of the Lake County Medical Society and the Mercy Hospital staff, Jan. 8, 1925.

We used a sterile needle for each test, and either dry heat or boiling for the sterilization. Controls were used at first, but later abandoned as being quite useless for the first test. We expected to use a control for the second test after three doses of toxin; but because of not having control material at hand in our rush to complete as many tests before the Christmas holidays as possible, controls were omitted in most of the second tests included in this report.

TABLE 1.—*Percentage of Pupils Tested, Number Enrolled and Percentage Positive, Slightly Positive and Negative to Dick Test, Gary Schools, July 24 to Dec. 20, 1924*

School	Number Enrolled	Per Cent. Pupils Tested	Per Cent. Positive	Per Cent. Slightly Positive	Per Cent. Negative
Roosevelt	1,714	27	40	8	50
Beveridge	751	30	34	10	56
Tolleston	583	21	50	11	40
Pulaski	619	16	11	5	84
Froebel	2,662	7	20	12	59
West Gary	95	51	12	9	79
Clark and West Fifth	123	31	84	8	8
Emerson	2,437	9	45	9	45
Jefferson	994	25	43	11	45
Horace Mann	897	11	49	16	35
Ambridge	167	30	58	16	26
Miller	258	23	57	15	28
Thirty-Ninth Avenue	824	20	50	9	41
Forty-Fifth Avenue	712	7	47	21	32
Total	12,836	15	40	10	50

All of the material and the methods employed have been supplied by the McCormick Institute for Infectious Diseases through the Dicks.

At the beginning we gave the following skin doses for immunization: a 300 skin dose first; 600, second, and 1,200, third. The reaction following this dosage was usually only a local one and never serious. In

TABLE 2.—*Number of Pupils by Nationalities, Also the Number and Percentage Positive, Slightly Positive and Negative to Dick Test*

	Total	Positive	Slightly Positive	Negative	Per Cent. Positive	Per Cent. Slightly Positive	Per Cent. Negative
American	894	432	106	356	48	11	40
Colored	174	68	11	95	39	6	54
Slavish	153	53	14	86	34	14	56
Polish	152	36	17	99	23	11	65
Croatian	114	40	6	68	35	5	60
Hungarian	98	33	11	54	33	11	56
Italian	85	25	11	49	29	12	59
Servian	64	20	12	32	31	19	50
Lithuanian	63	7	5	51	11	9	80
Russian	54	23	4	27	42	8	50
Jewish	48	20	7	21	42	14	44
Roumanian	43	17	2	24	40	4	56
Greek	28	9	4	15	33	14	53
Bohemian	22	8	1	13	36	4	60
English	33	11	2	20	33	6	61
Bulgarian	11	1	1	9	9	9	82
German	42	21	5	16	50	12	38
Irish	7	5	0	2	71	0	29
Swedish	16	6	1	9	37	6	56
Spanish	8	1	2	5	12	25	63
Scotch	13	7	1	5	54	8	38
Assyrian	9	5	0	4	55	0	45
Mexican	5	2	0	3	40	0	60
Danish	4	1	0	3	25	0	75
Persian	4	3	0	1	75	0	25
French	4	1	0	3	25	0	75
Swiss	1	1	0	0	100	0	0
Norwegian	4	0	1	3	0	25	75
Ukranian	1	1	0	0	100	0	0
Japanese	1	0	0	1	0	0	100
Austrian	4	3	0	1	75	0	25
Saxon	3	2	0	1	67	0	33
Total	2,162	862	224	1,076	40	10	50

November, the dosage was increased to 500, 1,000 and 2,000. With this dosage, the reactions were no greater than with the smaller dosage. The next series of immunizations will contain a 4,000 skin dose for the third dose.

Most of these tests have been given by Dr. Georgianna Lutz, and I have made most of the interpretations.

In the administration of tests we have used the McGregor Schick syringes, because of the wide

TABLE 3.—*Number of Pupils by Ages, Also the Number and Percentage Positive, Slightly Positive and Negative to Dick Test*

Age in Years	Total	Positive	Slightly Positive	Negative	Per Cent. Positive	Per Cent. Slightly Positive	Per Cent. Negative
Under 4	3	3	..	..	..	..	..
4	26	14	1	11	53	4	42
5	94	47	8	39	52	9	42
6	196	106	26	64	51	12	32
7	252	117	27	108	46	8	46
8	261	114	20	127	42	7	46
9	278	105	29	144	37	12	51
10	275	76	38	161	28	14	58
11	238	103	15	120	42	7	50
12	163	52	18	93	32	11	57
13	119	44	16	59	30	21	49
14	73	26	4	43	35	6	59
15	33	3	5	25	9	15	75
16	10	3	1	6	30	10	60
17	7	2	0	5	29	0	71
Adults	135	47	16	71	34	12	53
Total	2,162	862	224	1,076	40	10	50

graduations and the colored plunger. The half inch 26 gage D. & H. Summit needles have been the most satisfactory.

There have been given 2,162 Dick tests, 927 to males and 1,235 to females. Among the males, 40 per cent. were positive, 9 per cent. slightly positive and 50 per cent. negative. With the females, 40 per cent. were positive, 12 per cent. slightly positive and 48 per cent. negative.

TABLE 4.—*Dick Retests After Three Doses of Scarlet Fever Toxin*

Number retested	328
Positive	63, or 19 per cent.
Slightly positive	53, or 16 per cent.
Negative	212, or 65 per cent.

Seven per cent. reported having had scarlet fever, and of these 28 per cent. were positive, 12 per cent. slightly positive and 60 per cent. negative.

Fifteen per cent. of our total school enrolment has been tested.

There have been forty-one cases of scarlet fever reported to the board of health since the opening of school, in September. None of these have been among the Dick negative pupils and two were among the Dick positive group.

COMMENT

The severest reactions that have come to our attention have been three cases of urticaria, two being in adults. This developed soon after the administration of the toxin. One pupil had a rash that was ascribed to the toxin by the family physician.

In one school following the administration of toxin to sixty-seven, no pupils lost any time. In another school, sixty-eight first doses were given, and one pupil stayed home half a day on account of a sore arm. Another pupil, a 7 year old girl, was reported to have had a rash with a mild illness after this dose. With her, the second dose was followed by only a moderate local reaction. The third dose was followed by fever; two days later an eruption occurred and a diagnosis of chicken pox was made, which was probably the

cause of the fever she had rather than the toxin. Sixty-six of the pupils lost no time from school.

Liberty (German) measles has been prevalent in some schools, and this makes it rather difficult for us to keep track of every reported rash. Those rashes reported as probably due to the toxin proved to be measles, with the exception of three that were not seen during the eruptive stage. Only one of these patients was seen by a physician.

In one instance, a boy of 12 years was found to be positive after three doses of scarlet fever toxin. He was told he should have another dose, Oct. 31, 1924, when his second Dick test was read. November 10, he developed scarlet fever before receiving the fourth dose.

Another 11 year old boy was positive after three doses and was given a fourth dose, November 20. He was quarantined at home, December 10, because his sister, who had not been tested or immunized, developed scarlet fever. January 5, he had not developed the disease.[1]

In one school we gave fifty-seven children, 51 per cent. of the pupils, the Schick and the Dick test at the same time. Every child was present the following day for the reading of the Dick test. Occasionally a child would not be in school to have the test read, and a report would come that it had made him sick. This indisposition was, of course, from some other cause. On the other hand, parents would bring or send an indisposed child back for the reading of the test.

We have not sent out notices to parents of the time tests would be given, as the children behave better with reference to the tests when the parents are not present. When the test was given, we sent a notice home that the test had been given and that it was very necessary for the pupil to be back at the time stated

Name..... Class.....

School..... Nat..... Age...yrs. ...mo.

Address .....

To the School Physician, Public Schools, Gary, Ind.

Please give Dick Test to determine whether my child is immune to Scarlet Fever. If not immune give three doses of Scarlet Fever Toxin to bring about immunity.

Had Scarlet Fever.....

Was intimately exposed.....

.....

Parent or Guardian.

Front of card.

for reading. A general invitation to call or visit the school at any time was added. This brought a goodly number of parents to school. We have not sent a notice regarding results of tests because we have believed it possible for this to be a part of the education of the child, and we have marveled at the readiness with which even the kindergarten pupils could grasp the subject. The rule was to inform every child the result of the test in terms that it could comprehend.

1. Jan. 8, 1925, a lad was found with desquamating lesions who gave a history of illness beginning December 26, and who was Dick positive in October. He had not received any immunizing toxin. His sister, who was Dick negative, showed no signs of having had scarlet fever and gave a history of no illness, although she had been with him constantly.

CONCLUSIONS

The Dick test appears to be a satisfactory method of determining persons susceptible to scarlet fever.

Immunization without previous tests of any group of school children is not justified as a routine.

Dick Test.....
Observed.....hrs. after

Skin Reaction			Control		
Size.....MM.			.....MM.		
Redness	Ft.	Mod. Int.	Ft.	Mod.	Int.
Swelling	Pres.	Abs.	Pres.	Abs.	

Remarks .....
.....

1st dose.....St.....
.....
2nd dose.....St.....
.....
3rd dose.....St.....
.....

Dick Test.....
Observed.....hrs. after

Skin Reaction			Control		
Size.....MM.			.....MM.		
Redness	Ft.	Mod. Int.	Ft.	Mod.	Int.
Swelling	Pres.	Abs.	Pres.	Abs.	

Remarks .....
.....

Back of card.

The three doses of scarlet fever toxin given appears to immunize about 65 per cent. of the pupils.

The group found to be still slightly positive on retests is probably largely immune; but, to determine this, final tests with controls are needed.

No case of scarlet fever has developed so far in any person pronounced probably immune. Three cases have developed in persons told that they were Dick positive.

No immunity against German measles is developed in persons after scarlet fever toxin injections. Some data will be available on this point later.

Larger immunizing doses of scarlet fever toxin, such as we have now begun to use, are desirable.

The Source of Bacteriophage.—To determine whether a given material contains bacteriophage, or to obtain a specimen of phage for study, a small portion of the material is put into nutrient broth which is kept at 37 C. for one or more days. The contaminating bacteria usually form a luxuriant growth. The bacteria are removed by centrifugalization and filtration. The clear, sterile filtrate may or may not contain a phage active for one or more bacteria. This can be determined by adding some of it to young broth cultures of various bacteria and noting the effect upon these cultures; or by making agar cultures from them and noting the nature of the colonies that develop. If the broth cultures continue to grow normally and if the colonies on agar develop normally, it is indicated that the filtrate does not contain a phage active for the bacterium being used. The presence of a phage is indicated by inhibition of the growth and clearing of the broth cultures and the abnormal forms of the colonies on agar. . . . Cultures on solid medium seem to be a more delicate test than fluid cultures.—Bull, C. G.: Bacteriophage, *Physiol. Rev.* **5**:95 (Jan.) 1925.

GASTRIC TETANY

REPORT OF A CASE TREATED WITH AMMONIUM CHLORID *

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AND
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One result of recent advances in our knowledge of the regulation of acid base equilibrium of the body has been a better understanding of the condition known as gastric tetany and of the various factors concerned with its production.

Beginning with the experimental work of McCann [1] and of MacCallum and his associates,[2] many experimental and clinical studies [3] have demonstrated that gastric tetany is accompanied by and associated with an alkalosis, as indicated by an increase in the blood bicarbonate and a decrease in the hydrogen ion concentration. There also occurs a lowered concentration of blood and urinary chlorids, an increase in the phosphates and sulphates, and a variable rise in the nonprotein nitrogen of the blood. In addition, under similar conditions blood changes in the same direction have been noted in animals and in patients exhibiting to a less degree some of the signs and symptoms observed in tetany.

That these changes in the constitution of the blood are due to the loss of hydrochloric acid by vomiting or gastric lavage seems definitely established, but the exact nature of the mechanism responsible for the production of the tetanic phenomena remains in doubt. Also, the relation of gastric tetany to other forms of tetany is not clear, and efforts to explain the cause of all forms of tetany on the basis of a single mechanism have served, to a certain extent, to confuse the problem.

A consideration of various investigations of all forms of tetany [4] suggests the following possible explanations of the production of gastric tetany: 1. The direct effect of the increased alkalinity on the peripheral nerves causing increased excitability. This possibility is supported by certain fundamental experiments of the type reported by McClendon [5] and indirectly by the work of Grant and Goldman [6] on the tetany of hyperpnea. 2. An indirect action of the increased alkalinity by way of an anoxemia and consequent increase in nerve irritability.[7] 3. A disturbance in the concentration and ratios of various cations of the body resulting from the change in acid-base balance. This refers particularly to changes in the calcium ion concentration,[8] a disturbance in the calcium : sodium ratio, or more fundamentally to the monovalent cation : divalent cation ratio. 4. A disturbance in the anion concentrations and ratios,[9] not necessarily caused by the altered acid-base balance itself but accompanying it and due to the same cause; i. e., the loss of hydrochloric acid. This explanation involves particularly the bicarbonate,[9] phosphate and chlorin [10] ions, and includes the possibility of the effect of disturbed relations between anion and cation.

So far, evidence is lacking to indicate which of these explanations is the correct one, or to reconcile these various conflicting views. It is probably true, as MacCallum [4] suggests, that while the final change in the blood that produces the symptoms of tetany is the same for all types, the changes occurring before this point is reached may vary greatly in the different forms, and the road to tetany of the gastric type may, over a large part of its course, be vastly different from that of the other varieties.

In spite of the general uncertainty as to the exact mechanism of tetany production, the fact remains that gastric tetany is accompanied by an alkalosis, and recovery from the attack is associated with a restoration to normal acid-base equilibrium. With the recognition of this fact, the possibility of successfully treating this condition by replacing missing acid, thereby restoring the acid-base balance to normal, was apparent. Early experimental results were, however, inconclusive. McCann [1] reported the relief of symptoms in dogs with artificial pyloric obstruction by administering hydrochloric acid by the duodenum. MacCallum and his associates,[2] using somewhat smaller amounts of acid intravenously, failed to corroborate this finding, but they had some success in warding off attacks of tetany in dogs with experimental pyloric obstruction by injecting large amounts of sodium chlorid solution. Sodium chlorid in large doses has been used experimentally and clinically by Haden and Orr,[11] and clinically by Dixon.[12] They report successful results with large amounts. It should be pointed out that Haden and Orr feel that the decrease in chlorid concentration is the important factor in this condition. Murray [13] has lately reported the use of injections of hydrochloric acid in two cases. In one case, the dose employed was so small as to preclude any therapeutic effect. In the other instance, the patient received 1,000 c.c. of a twentieth normal solution without evidence of much change in her condition, but without apparent ill effects. Murray also states that he has safely administered large amounts of hydrochloric acid intravenously to dogs.

* From the Department of Internal Medicine, University of Michigan Medical School.

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11. Haden, R. L., and Orr, T. G.: Chemical Changes in Blood of Man After Acute Intestinal Obstruction, Surg., Gynec. & Obst. **37**: 465 (Oct.) 1923; Use of Sodium Chlorid in Treatment of Intestinal Obstruction, J. A. M. A. **82**: 1515 (May 10) 1924.

12. Dixon, C. F.: The Value of Sodium Chlorid in the Treatment of Duodenal Intoxication, J. A. M. A. **82**: 1498 (May 10) 1924.

13. Murray (Footnote 3, fourth reference).

In 1922, McCann,[14] on the basis of Haldane's[15] demonstration of the production of acidosis in man by the oral administration of ammonium chlorid, gave a solution of ammonium chlorid intravenously to a woman suffering from an attack of gastric tetany. He reported rapid and complete recovery from the attack. Recently, Ellis[16] reported the successful use of ammonium chlorid by rectum in two cases of gastric tetany. To these cases we add the report of a case of gastric tetany successfully treated by the injection of ammonium chlorid intravenously. It is hoped that this report will stimulate further use of this drug, thereby helping to determine the value of its use. Naturally, it is not intended that such treatment shall replace the surgery that is necessary for the cure of the most common fundamental cause of the condition; i. e., pyloric obstruction. We believe, however, that it will so improve the preoperative condition that surgical treatment, which in the past has frequently been withheld because of the apparent hopelessness of the condition, will be more often used. In addition, it will in many instances tide the patient over the critical period before surgical measures can be instituted, thus acting as an emergency life-saving measure and probably reducing the operative risk.

REPORT OF CASE

History.—Mrs. L. P., a housewife, aged 50, was admitted to the University Hospital, Dec. 12, 1923, complaining of a "burning in the stomach" and inability to retain food. She stated that the onset of her present illness had occurred four months before. At that time, she complained of a sharp pain in the pit of the stomach, which radiated to the right side and occurred at half hourly intervals during the day. The pains persisted for three weeks, by which time the patient was decidedly jaundiced. An operation was performed, and the gallbladder, which contained several stones, was removed. She felt well for one month, and then the symptoms of burning and distress in the stomach returned. For a time she was fairly comfortable on a light diet, but the symptoms increased in severity and frequency, and she noticed that a painful lump appeared in the abdomen about two hours after eating. Hot water and soda frequently acted as an emetic and gave relief, with the disappearance of the lump. Three weeks before admission vomiting began, and she was of necessity restricted to a diet consisting solely of milk. The vomitus had at times a "coffee grounds" appearance. The stools were occasionally tarry, but it was thought that the medicine the patient was taking might have been responsible. She did not complain of nausea, and there was no pain between meals; i. e., when the stomach was empty.

The patient's past history revealed but one or two facts of importance. She had had the usual children's diseases, including scarlet fever and diphtheria. Four years before, she had complained of occasional epigastric pain, which radiated to the right side. She had borne eight children. Her best weight had been 195 pounds (88.5 kg.) three months before admission. Her weight at the time of examination was 135 pounds (61 kg.). The family history was negative.

Examination.—The patient presented evidence of marked recent loss of weight. There was a diffuse brownish pigmentation of the entire skin, more marked on the exposed areas. The patient stated that the condition had been present all her life. There was marked oral sepsis and dental caries. A small, adenomatous thyroid was palpable.

The chest was somewhat emphysematous, and the lungs were hyperresonant to percussion, but otherwise normal. Examination of the heart revealed a tachycardia (120), but was otherwise negative.

The abdomen was soft, and the musculature poorly developed. There was a large, recent right upper quadrant scar of a surgical incision. Some tenderness was noted in the epigastrium, and the abdominal aorta was easily palpable. No masses were felt, and the spleen and liver were not palpable. Pelvic examination revealed a relaxed floor with a cystocele and a rectocele. The remainder of the examination gave essentially normal findings. A provisional diagnosis of postoperative obstruction of the duodenum, and starvation acidosis was made.

The urine on the day of admission was normal (?), but the following day it showed albumin and a one plus reaction for acetone and diacetic acid. Examination of the blood revealed: hemoglobin, 90 per cent.; red blood cells, 4,970,000; white blood cells, 13,900, with a polymorphonuclear neutrophil percentage of 28.

Course.—On admission, the patient was given glucose solution by mouth, but it was not retained.

December 14, rectal administration of glucose by the drip method was begun. At 4 p. m., the patient vomited 1,100 c.c. of a dark brown fluid. Following the emesis, she was given an infusion of 1,000 c.c. of physiologic sodium chlorid solution. At 8 p. m., the patient suffered an attack of semicoma lasting five minutes, during which time her hands were stiff. A second attack occurred at 10 p. m., and was accompanied by typical carpopedal spasm. A second infusion was given, consisting of 20 gm. of glucose in 1,000 c.c. of physiologic sodium chlorid solution.

December 15, the patient was decidedly stuporous. The electrical reactions were determined and showed a typical reaction of tetany; i. e., cathodal closure tetany = less than 1 milliampere. At times, there was marked and typical carpopedal spasm and twitching of the face muscles. The Chvostek sign was very easily obtained. At 2 p. m. she vomited 640 c.c. of a greenish fluid. The carbon dioxid combining power of the blood at this time was 100 + per cent. by volume. The whole blood chlorids were 370 mg. per hundred cubic centimeters. The respirations were slow and very shallow. Four hundred cubic centimeters of an 0.82 per cent. solution of ammonium chlorid was given intravenously, caution being taken first to test the solution against the patient's blood to determine whether or not it caused hemolysis. Following the injection, the patient's face became flushed, the respirations rose to 18 and became deeper, and there was a diminution in the intensity of the spasm. The spasm gradually disappeared, and, although the patient remained rather stuporous for a time, this gradually cleared, and by 6 p. m. she was sleeping quietly. She passed a comfortable night.

December 16, the patient was resting comfortably and was prepared for operation. Operation was postponed, and she was returned to the ward, where she passed a comfortable day.

Operation.—December 17, very firm bands of adhesions were found which connected the pylorus and antral end of the stomach to the liver. There was a large mass, held firmly together by adhesions, involving the pylorus, the duodenum, the pancreas and the first portion of the jejunum. They were not separated. A posterior gastro-enterostomy was performed. The patient's condition immediately following the operation was fair. Some spasm of the hands was noted, and she was given an infusion of 2,100 c.c. of physiologic sodium chlorid solution and 400 c.c. of 0.82 per cent. ammonium chlorid solution intravenously. The spasm promptly disappeared.

Her further convalescence was entirely uneventful, and she was discharged, January 14. At the time of discharge the electrical reactions were entirely normal, and the whole blood chlorids were 625 mg. per liter.

COMMENT

The nature of the obstruction in this case is worthy of some comment. Although at operation the obstruction apparently occurred in the jejunum, the development of the tetany and the character of the blood changes indicate that probably the obstruction also occurred higher; i. e., at the pylorus. Murray[13] has

14. McCann, W. S.: A Note on the Use of Ammonium Chloride in Tetany, Proc. Soc. Exper. Biol. & Med. **19**: 393, 1922.
15. Haldane, J. B. S.: Experiments on the Regulation of the Blood's Alkalinity, J. Physiol. **55**: 265 (Aug.) 1921.
16. Ellis, A. W. M.: Acid-Base Equilibrium of Blood; Alkalinuria, Quart. J. Med. **17**: 405 (July) 1924.

suggested that in cases of obstruction the degree of alkalosis and the development of tetany are dependent on the proportion of alkali (intestinal contents) to acid (gastric contents) lost. He likewise suggests that this relationship may be of assistance in determining the location of an obstruction, greater increases in the carbon dioxid combining power being present the nearer the obstruction is to the pylorus.

The provisional diagnosis of acidosis at the time of admission is of interest in view of the subsequent finding of alkalosis and the development of tetany. The diagnosis of acidosis was based on the presence of an "acetone breath" and the history of deprivation of food, and was later supported by the finding of a ketonuria. Ellis [10] has recently reported the presence of a ketonuria in cases of alkalosis, and he suggests that it is due to a deficient oxidation in the tissues, the result of anoxemia. The importance of the possible presence of a ketonuria lies in the danger of a mistaken diagnosis and consequent treatment of a sort to increase the alkalosis. Such a possibility emphasizes the importance of determinations of the carbon dioxid capacity or p_H of the blood in cases of frequent and persistent vomiting, especially if an obstruction is suspected. In the case here reported, the blood findings of a carbon dioxid capacity of 100 + per cent. by volume and blood chlorids of 370 mg. per hundred cubic centimeters are similar to those reported by various writers in cases of gastric tetany, clinical and experimental. It is unfortunate that determinations of the p_H of the blood could not be obtained, and that the nonprotein nitrogen of the blood was not determined.

The results from the use of the ammonium chlorid were gratifying, although not as dramatically prompt as in the case reported by McCann.[14] In a few hours the patient changed from a person critically ill to one in a relatively good condition. It is possible that the failure to secure a more prompt recovery was due to the use of too small a dose of the ammonium chlorid. The single injection of 400 c.c. of an 0.82 per cent. solution, however, maintained her satisfactory condition for nearly forty-eight hours, and the slight recurrence of the symptoms of tetany following operation promptly disappeared after a second injection of a similar amount.

Unfortunately, the result of the treatment offers no definite evidence as to the possible mechanism of the production of gastric tetany. The acidotic tendency of the ammonium chlorid as opposed to the alkalosis present, as well as the fact that improvement is known to be associated with a return of the acid base balance to normal, might be construed as evidence of a primary effect of increased alkalinity. On the other hand, the restoration to normal equilibrium might be equally effective in an indirect manner through its influence on oxidative processes or ion concentrations and relationships, or the chlor-ion introduced might exert an influence directly or indirectly.

Attention should be drawn to the possible ill effects of certain common methods of treatment that might be used in cases of gastric tetany. Gastric lavage is frequently recommended. This procedure results in removing more acid from the stomach, and cannot help but increase the alkalosis. In fact, it has been noted clinically that attacks of tetany seem at times to be initiated by a gastric lavage, and similar observations have been made experimentally. Gastric lavage is, therefore, contraindicated. The quite common tendency to incorporate alkalis in the fluids given to combat the dehydration so commonly present (a tendency made quite probable in view of the possible presence of a ketonuria) may likewise result in treatment that would increase the alkalosis.

SUMMARY AND CONCLUSIONS

1. A case of gastric tetany associated with pyloric obstruction caused by a postoperative inflammatory process showed an increase in the carbon dioxid power of the blood plasma to 100 per cent. by volume and a blood chlorid concentration of 370 mg. per hundred cubic centimeters. A definite ketonuria was present. The test of nerve electrical excitability showed a typical reaction of tetany. These findings are similar to those reported by other writers in cases of gastric tetany.

2. An intravenous injection of 400 c.c. of an 0.82 per cent. solution of ammonium chlorid resulted in a complete and fairly prompt disappearance of the tetanic symptoms and a marked improvement in the patient's condition. No untoward effects were noted.

3. The use of ammonium chlorid is not intended to replace surgical treatment, which is the only means of permanent cure in gastric tetany due to organic pyloric obstruction. In this type of case, ammonium chlorid is of value as a temporary and preoperative treatment.

4. The use of gastric lavage and administration of alkalis is contraindicated in gastric tetany. This does not, of course, preclude the necessary emptying of a distended stomach immediately prior to operation.

PULMONARY COMPLICATIONS AFTER LAPAROTOMIES

THE SITE OF HYPODERMOCLYSIS IN RELATION TO THEM *

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In spite of many prophylactic measures used to avoid pneumonia after laparotomies, this complication still threatens. The frequency of such pneumonias runs as high as 10 per cent. in the European literature. In this country, recent reports from the Mayo Clinic [1] show that in a series of 140 cases of acute or chronic pulmonary suppurations following operations, thirty-eight cases followed laparotomy. Although pulmonary suppurations do not belong to pulmonary complications following *immediately* after operation, these figures have some bearing on the question of the frequency with which pulmonary pathologic conditions follow laparotomies.

There was, and still is, much discussion as to the definition of postoperative pneumonia. Years ago, Franke [2] said: "Each postoperative elevation of the temperature that is accompanied by even slight positive percussible and auscultatory pulmonary findings should be considered as a pneumonia." It is doubtful whether this statement always holds true in the morbid anatomic sense; but it seems to be true clinically. In other words, such findings should be considered as the first sign of an approaching pulmonary complication.

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1. Hedblom, C. A.: The Surgical Treatment of Acute Pulmonary Abscess and Chronic Pulmonary Suppuration, J. A. M. A. 83: 1577 (Nov. 15) 1924.

2. Franke, F.: Pneumonie nach Bauchoperationen, Verhandl. d. deutsch. Gesellsch. f. Chir. 34: 117, 1905.

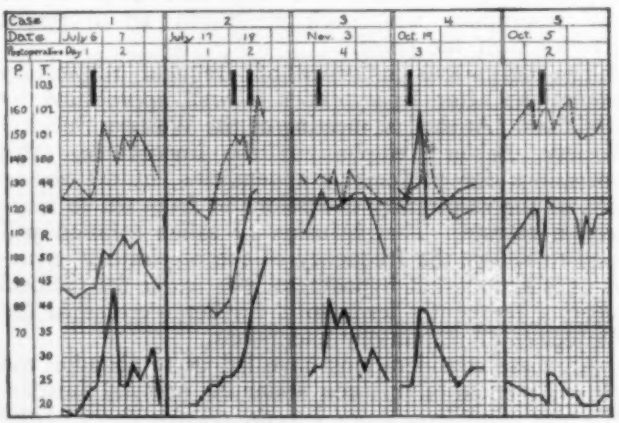
It is surprising that the etiology of such a well known and frequent pathologic condition as postoperative pneumonia should be still a much debated question. There are, however, etiologic factors that are generally accepted. One of these is old age. Henle [3] states that 27 per cent. of patients over 70 years have postoperative pneumonia. Pathologic conditions of the lungs and heart—emphysema, bronchitis, arteriosclerosis and myocarditis—are among the evident causes. Cachectic patients, especially those with malignant neoplasms, frequently suffer from postoperative pulmonary complications. Aspiration of vomitus or bronchial secretion during the operation, exposure to cold during the operation or transportation, and a flat position in bed are recognized etiologic factors. Length of the operation, as well as general anesthesia, are not considered as important contributing factors, contrary to what was believed some fifteen years ago. One of the most prominent factors, however, relates to the site of the operation. This point has not been stressed strongly enough in the literature. There can be no doubt that following incisions through the upper abdominal wall pneumonia results far more frequently than after incisions through the lower abdominal wall. The statistics of postoperative pulmonary complications found in the literature do not distinguish between these two different approaches.

It is sufficient to recall the normal physiology of respiration to appreciate the enormous difference between the rôle played by the upper abdomen in respiration as compared with that of the lower abdomen. When the incision is through the upper abdominal wall, the pain in the operative wound during the first week excludes the possibility of an adequate abdominal respiration. The patient is forced to substitute for this the thoracic type of respiration, with relative immobilization of the diaphragm. The necessity of substitution of abdominal respiration for thoracic is perhaps the explanation of the fact that postoperative pneumonias are about twice as frequent in males as in females, since the normal physiologic type of respiration in the female is thoracic.

The rôle that inadequate thoracic respiration may play in the development of a postoperative pneumonia is better appreciated when we consider the clinical and pathologic picture of the postoperative pulmonary condition, which at necropsy reveals in its final stage atypical bronchopneumonia.

Aside from agonal hypostatic engorgement, fatal emboli and pulmonary suppurations, which are not in the scope of this paper, the clinical and pathologic picture of postoperative pulmonary involvements are similar. Two stages may be distinguished in the development of the typical postoperative pneumonia. The first stage develops and usually reaches its climax during the first three days after the operation. It begins with catarrhal changes in the larger ramifications of the bronchial tree. Clinically, these are recognized by cough and crepitant râles. The percussion note may be unimpaired. As a rule, the exudative process begins in the mucosa of the bronchi. Soon engorgement of the small bronchioli begins. In favorable circumstances, the condition remains at this stage for a day or two without change, and then the exudate begins to absorb and disappear. Otherwise, when circumstances are favorable for a further development of the pulmonary condition, the latter develops into the second stage. An involvement of the lung parenchyma proper follows. Percussible findings at this stage are positive and typical. The main causes for a progressive development of the condition into the second stage are respiratory and circulatory decompensations. A latent heart decompensation with edema of the lungs, insufficient expectoration and inadequate respiration and ventilation of the lungs because of pain in the operative wound in the upper abdominal wall are the most important factors leading the condition from the first stage to further development. Clinically, there are cases in which the first stage does not occur and the pulmonary condition is recognized directly in the second stage. We find this in instances in which the respiratory or circulatory systems are in a stage of decompensation before operation, and present the typical findings of the first stage.

From this short analysis of the development of postoperative pulmonary complications, it is apparent that either an inadequate circulatory or respiratory function may play important rôles in the onset and development of a pneumonia after a laparotomy. This



Changes in respiration and pulse as the result of hypodermoclysis under the pectoral muscles: heavy line, respiration; light line, pulse; broken line, temperature; solid vertical columns, hypodermoclysis. Case 1, Mrs. B., aged 40; cholelithiasis; cholecystectomy; hypodermoclysis on the first day after operation. Case 2, Mr. C., aged 67; carcinoma of the cecum; resection; the incision passed through the upper and lower abdominal wall; hypodermoclyses on the second day after operation. Case 3, Mrs. C., aged 42; carcinoma of the stomach; resection (Polya); hypodermoclysis on the fourth day after operation. Case 4, Mr. L., aged 57; duodenal ulcer; cholecystitis; gastroenterostomy; cholecystectomy; hypodermoclysis on the third day after operation. Case 5, Mrs. R., aged 26; gynecologic service; ectopic pregnancy; ablation; lower midline incision made; hypodermoclysis on the second day after operation.

is still more conspicuous when it is recalled that the main therapeutic and prophylactic measures practiced are: stimulation of the cardiac system, reduction of the frequency of the respiratory excursions, better ventilation of the lungs, and adequate expectoration.

Among circulatory stimulants, when immediate action is desired, infusion of saline solution into the cellular tissue is the most prominent. Physiologic sodium chlorid solution with glucose is given frequently after laparotomy in the way of hypodermoclysis to suppress acidosis, and at the same time it is a feeding resource in patients in whom a complete rest of the gastro-intestinal tract is indicated. A general practice is the infusion of the fluid into the cellular tissue under the pectoral muscles. A careful examination of the respiratory and pulmonary curve before and after such a hypodermoclysis shows interesting facts. In many cases, a hypodermoclysis under the pectoral muscles in patients during the first to the third day after laparotomy through the upper abdom-

3. Henle, W., quoted in Beitr. z. klin. Chir. **122**: 640, 1921.

inal wall leads to a marked increase in frequency of the respiratory excursions and later to a faster pulse rate. The same reaction was noticed after laparotomies when the incision passed through the lower abdominal wall but when general peritonitis was present.

This reaction, peculiar at first thought, is readily explainable. Hypodermoclysis of about 1,000 to 2,000 c.c. of fluid under the pectoral muscles is in itself a considerable trauma to the soft tissues of the thoracic wall. That this trauma is not merely theoretical may be judged from the patient's complaints and tenderness. A laparotomy through the upper abdominal wall leads to a voluntary limitation of the respiratory movements of the diaphragm because of pain in the incision during the first several days after the operation. The patient attempts to replace abdominal respiration with thoracic. A hypodermoclysis under the pectoral muscles during this period of time will lead, because of pain and discomfort, to a relative immobilization of the thorax and to a more superficial respiration than before. To accomplish the necessary aeration, the respiratory excursions will immediately become more frequent. An increased frequency of the respiration will soon result in an increased frequency of the pulse.

The deleterious influence of frequent respiratory excursions after laparotomies is well appreciated by clinicians. At the last meeting of the Western Surgical Society, Babler [4] emphasized the importance, after operations for perforative appendicitis, of the reduction of the respiratory excursions to from ten to fourteen a minute. That infusion of saline solution will tend to reduce the frequency of the respiratory excursions is known, but hypodermoclysis under the pectoral muscles frequently leads to a further increase in the frequency of respiratory excursions.

All these considerations have led us to abandon the general method of infusion under the pectoral muscles. We now administer fluids into the cellular tissue of the outer aspects of the thighs. An injection of 1 c.c. of 0.5 per cent. procain solution into the skin where a large gage (from 16 to 18) needle is to be inserted renders the whole procedure painless, save for some slight pressure in the subcutaneous tissue when a large amount of fluid is infused rapidly. During a simultaneous infusion into both thighs, as much as 2,000 c.c. can easily be given to the patient when injected slowly over a period of thirty minutes. The needles may be left inserted for hours, without discomfort to the patient, if a slow, constant infusion is desired.

SUMMARY

Acute pulmonary complications after laparotomies are still encountered frequently.

The clinical incidence of postoperative pneumonia is far greater after a laparotomy through the upper abdominal wall than after laparotomies when the incision has passed through the lower abdomen only.

Pain in the operative wound during the first days after the operation forces the patient on whom a laparotomy through the upper abdomen was done to abandon the abdominal type of respiration.

Hypodermoclysis under the pectoral muscles in such patients, with a trauma to the thorax wall sufficient to prevent an adequate deep thoracic respiration, results in an increase in frequency of the respiratory excursions, with a secondary rise in frequency of the pulse.

To avoid this deleterious reaction of the hypodermoclysis in patients after laparotomy, infusion should be made in the outer aspects of the thighs.

4. Babler, E. A.: Crile's Technic in Perforative Appendicitis, abstr. J. A. M. A. 84: 60 (Jan. 3) 1925.

Clinical Notes, Suggestions, and New Instruments

APPENDICITIS WITH AN ILEO-APPENDICAL FISTULA*

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We report this case because of the clinical and surgical interest attending it. The rarity of the condition is attested by the fact that only one other case is described, and that only in 1923, by Willour.[1] He reported a similar case and was unable to find a report of another in the literature, except three cases, which were found at necropsy. In our own search of the literature, we were unable to find any other case reported.

REPORT OF CASE

J. H., a man, aged 25, entered the hospital, Oct. 19, 1924, complaining of pain in the right lower quadrant and right loin. In November, 1923, he had an attack of pain in the right lower quadrant and was nauseated but did not vomit. At that time, he was confined to bed for two weeks and was unable to work for two weeks following. After recovery there was no more pain until Sept. 9, 1924, when he was seized with a sudden, severe pain in the abdomen. This lasted about fifteen minutes. After resting a half hour, he felt entirely relieved. In the afternoon of the same day he had a similar attack, but of a somewhat milder character. After that he had attacks of pain every three or four days. The pain was always felt simultaneously in the right lower quadrant, in the right loin and in the back as high as the base of the neck. There was no radiation downward to the thigh or genitalia. The patient complained of epigastric pain and distress a few minutes after eating. This usually lasted for three or four hours and was followed by complete relief. He had never vomited nor had he ever been jaundiced. He had not noticed any blood or gravel in the urine.

The general physical examination revealed no abnormalities. The abdomen was flat, and there were no spasms or rigidity. There was a localized tenderness on deep palpation in the right iliac region, and tenderness on pressure in the right costal vertebral angle. There were no palpable masses. The liver, spleen and kidneys were not palpable.

The temperature at entrance was 97.8 F., the pulse 70, and the respiration 20. The leukocyte count was 9,800, with 62 per cent. polymorphonuclears. The urine was normal.

Although there were several atypical features in the case, the history of a previous attack and the localized tenderness in the right iliac region led us to make a diagnosis of recurrent appendicitis. An operation was advised, and was accepted.

The abdomen was entered through a right rectus incision 3½ inches (9 cm.) long. The cecum was brought up together with the small bowel and adherent appendix. The appendix appeared slightly inflamed, with the surface vessels slightly congested. The appendix, at its extreme tip, was found to be intimately adherent to the ileum at about 8 inches (20 cm.) from the ileocecal valve. There was no line of cleavage between the appendix and the ileum. This adherent portion of the appendix to the ileum was separated, when it was found that a well established fistulous tract connected the two. The appendix was removed in the usual way, and the bowel perforation was closed with a purse-string suture and reinforced with a row of Lembert sutures. The bowel was placed back in position; the omentum was brought down so as to cover the field of operation, and the abdomen was closed.

The pathologic report was "chronic appendicitis." The patient made an uneventful recovery and was discharged on the tenth day after the operation.

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1. Willour, L. S.: Anomaly of Appendix, J. A. M. A. 81: 213 (July 21) 1923.

Special Article

TYPHOID IN THE LARGE CITIES OF THE UNITED STATES IN 1924

THIRTEENTH ANNUAL REPORT

THE JOURNAL presents its thirteenth annual survey [1] of typhoid fever mortality in the sixty-nine cities of the United States that had more than 100,000 population in 1920.[2] In the preceding reports the cities have been grouped according to population, but this year a departure has been made and the recognized geographic divisions of the U. S. Census Bureau have been used instead. The typhoid mortality rates in previous years have been shown to bear no demonstrable relation to the size of the city population, and on the other hand there has been shown a significant connection between geographic location and typhoid mortality. It is thought that this may be brought out more clearly by a definite geographic arrangement.

The cities of the New England group (Table 1) have for the most part exceedingly low typhoid rates. Two cities in this group, Fall River and Hartford, report no typhoid deaths for 1924, and are the only cities in the United States with a population over 100,000 to show a perfectly clean typhoid slate. It seems hardly worth while to institute comparisons within this group for the calendar year 1924, since the actual number of deaths is so small that chance fluctuations in the number of imported cases might well account for the slight differences that are observed. It is hoped that in the near future it may be possible to distinguish more definitely than heretofore between the out-of-town cases brought to city hospitals and those occurring among city residents, thereby giving a truer picture of the indigenous typhoid. Even if it is possible to do this, however, there still remains the problem of separating the infections contracted within the city limits from those contracted elsewhere. Conditions over which the municipality itself has no control in the suburbs and in the hinterland may well be responsible for a large share of the typhoid in cities in certain sections of the country.

TABLE 1.—*Death Rates of Cities in New England States from Typhoid per Hundred Thousand Population*

	1924	1923	1922	1921	1916–1920	1911–1915	1906–1910
Fall River	0.0	4.1	3.3	2.4	8.5	13.4	13.5
Hartford	0.0	0.7	2.8	7.2	6.0	15.0	19.0
Worcester	0.5	2.6	3.1	3.2	3.5	5.0	11.8
Springfield	1.3	1.4	1.4	4.4	4.4	17.6	....
Lowell	1.7	2.6	2.6	5.2	5.2	10.2	13.9
Boston	2.1	1.0	1.4	3.1	2.5	9.0	16.0
Providence	2.5	0.8	0.0	2.5	3.8	8.7	21.5
Bridgeport	3.5	1.4	0.6	2.7	4.8	5.0	10.3
Cambridge	4.5	3.6	0.9	10.8	2.5	4.0	9.8
New Bedford	4.5	0.8	0.0	2.3	6.0	15.0	16.1
New Haven	5.1	4.6	5.8	4.7	6.8	18.2	30.8

TABLE 2.—*Death Rates of Cities in Middle Atlantic States from Typhoid per Hundred Thousand Population*

	1924	1923	1922	1921	1916–1920	1911–1915	1906–1910
Trenton	0.8	11.8	15.9	8.9	8.6	22.3	....
Rochester	1.2	1.9	2.5	3.2	2.9	9.6	12.8
Syracuse	1.6	2.2	1.6	3.9	7.7	12.3	15.6
Philadelphia	2.2	1.7	2.7	2.3	4.9	11.2	41.7
Jersey City	2.6	1.6	1.6	3.5	4.5	7.2	12.6
Newark	2.7	2.3	2.7	2.8	3.3	6.8	14.6
Yonkers	2.7	0.9	0.0	2.9	4.8	5.0	10.3
Buffalo	2.8	4.3	3.5	4.2	8.1	15.4	22.8
Scranton	2.8	1.4	1.4	6.5	3.8	9.3	31.5
New York	3.1	2.4	2.3	2.1	3.2	8.0	13.5
Paterson	3.6	2.9	2.1	5.8	4.1	9.1	19.3
Pittsburgh	3.9	3.7	4.6	4.1	7.7	15.9	65.0
Reading	5.4	2.7	9.2	11.7	10.0	21.9	42.0
Camden	6.3	4.0	5.7	6.6	4.9	4.5	....
Albany	12.6	3.4	1.7	4.3	8.0	18.6	17.4

TABLE 3.—*Death Rates of Cities in South Atlantic States from Typhoid per Hundred Thousand Population*

	1924	1923	1922	1921	1916–1920	1911–1915	1906–1910
Richmond	1.1	5.5	4.4	6.6	9.7	15.7	34.0
Baltimore	2.8	4.3	4.0	5.4	11.8	23.7	35.1
Norfolk, Va.	2.9	0.0	6.4	4.1	....	....	....
Washington	4.3	6.0	5.2	6.6	9.5	17.2	36.7
Wilmington	8.3	2.6	5.1	4.4	....	....	....
Atlanta	15.0	17.1	10.9	11.0	14.2	31.4	58.4

TABLE 4.—*Death Rates of Cities in East North Central States from Typhoid per Hundred Thousand Population*

	1924	1923	1922	1921	1916–1920	1911–1915	1906–1910
Akron	1.0	1.4	1.9	5.7	....	....	....
Milwaukee	1.0	1.0	2.5	1.9	6.5	13.6	27.0
Cleveland	1.2	1.7	2.2	3.4	4.0	10.0	15.7
Chicago	1.6	1.9	1.0	1.1	2.4	8.2	15.8
Dayton	2.4	3.6	3.7	5.2	9.3	14.8	22.5
Cincinnati	2.5	3.2	2.9	3.4	3.4	7.8	30.1
Detroit	3.0	4.0	5.0	5.8	8.1	15.4	22.8
Grand Rapids	3.4	1.4	0.6	2.8	9.1	25.5	29.7
Columbus	3.7	4.6	1.1	4.0	7.1	15.8	40.0
Indianapolis	3.9	2.6	5.4	7.3	10.3	20.5	30.4
Toledo	4.4	6.0	3.8	8.6	10.6	31.4	37.5
Youngstown	4.5	7.6	6.2	15.0	....	....	....

So far as the New England cities are concerned, the main features that call for remark are the fine record made by Providence for the last four years, the increase in the Boston rate in 1924 as compared with 1922 and 1923, and the fact that for three years in succession the city of New Haven has had the highest rate of any city in the New England group.

In the Middle Atlantic states (Table 2) there are more cities with more than 100,000 population than in any other geographic division. It is encouraging, therefore, to find that more than half the cities in this group report 1924 typhoid rates of less than 3. The low rate in the city of Trenton deserves especial mention, since for a number of years this city has suffered from a higher average typhoid rate than most of its neighbors.

New York had a higher typhoid mortality in 1924 than for several years. According to a preliminary report of the U. S. Public Health Service, the somewhat excessive 1924 rate was due to contaminated oysters. An unusual prevalence of oyster-borne infections seems, indeed, to be the outstanding feature in urban typhoid epidemiology in this country in 1924. As many as 650 excess cases of typhoid in New York have been attributed to this source. In addition, Chicago is thought to have had about 100 and Washington about fifty cases of oyster-borne infection. The full government report, setting forth the detailed evidence for this opinion, has not yet been published; but, as stated previously in THE JOURNAL,[3]

1. The preceding articles were published, May 31, 1913, p. 1702; May 9, 1914, p. 1473; April 15, 1915, p. 1322; April 22, 1916, p. 1305; March 17, 1917, p. 845; March 16, 1918, p. 777; April 5, 1919, p. 997; March 6, 1920, p. 672; March 26, 1921, p. 860; March 25, 1922, p. 890; March 10, 1923, p. 691, and Feb. 2, 1924, p. 389.

2. The deaths from typhoid in each city are those reported to us by the respective health departments. The rates have been calculated on the basis of midyear 1924 population, estimated by the method of the U. S. Census Bureau, save that in five instances, Hartford, Bridgeport, Washington, Akron and Youngstown, the 1920 census enumeration has been used.

3. Oysters and Typhoid, editorial, J. A. M. A. 84: 286 (Jan. 24) 1925.

the evidence collected by the individual health departments, as well as by the Public Health Service, is quite convincing. If present indications are confirmed by further information, this is one of the largest groups of cases—if not the largest—ever traced to contaminated shellfish. This occurrence raises the suspicion that this mode of infection may have played a larger part in typhoid causation in earlier years, but was so completely submerged by the great mass of water-borne and milk-borne cases that it could not be readily detected. In view of the publicity given to the 1924 typhoid outbreak, it is safe to say that oyster-borne infection will be even more carefully guarded against in the future than it has been in the past.

Among the other cities in the Middle Atlantic states, Rochester and Syracuse seem to be maintaining consistently excellent records. Camden, on the other hand, has had a higher typhoid average for the four years 1921 to 1924 than for the ten years preceding, a circumstance that would seem to call for inquiry. Albany appears to have had what might be termed an epidemic, the number of typhoid deaths in 1924 being considerably in excess of the total for the three preceding years.

The cities in the South Atlantic states (Table 3) have had a year of excellent record, Richmond, Baltimore and Washington reporting the lowest typhoid rates in their history. Baltimore, among the twelve largest cities in the country, makes a surprisingly low record. It could hardly have been anticipated ten years ago that Baltimore would in a short time be able to record a lower typhoid rate than New York. If the typhoid improvement in this group as a whole is maintained, the Northern cities will have to look out for their laurels.

The cities in the East North Central states (Table 4) have maintained, on the whole, excellent records. Only one city in this group has reported a rate of more than 10 in the last four years. Indianapolis and Toledo have not yet got into the race for the leadership, but are showing signs of a typhoid stabilization which looks promising for the future. Chicago, which suffered slightly in 1923 from water-borne typhoid, has this year experienced some oyster-borne infection, but the excess cases, while raising the 1923-1924 rates above those for 1921-1922, have not seriously broken into the city's good record of recent years.

The four cities in the East South Central states (Table 5) show more unevenness than those of any other group. Louisville has attained the splendidly low figure of 1.9, and Birmingham has repeated the relatively low rate of 1923. Nashville, on the other hand, registers a rate of more than 20, and Memphis the amazingly high figure of 41.2. The latter city evidently has something to explain.

The cities in the West North Central states (Table 6) make a very creditable showing.

The five cities in the West South Central states (Table 7) have shown in the last three years considerable tendency to improvement, but the average rates are still somewhat high as compared with Northern cities. Further improvement in the typhoid situation in this group may be anticipated when other Southern cities, such as Richmond, Baltimore and Louisville, are setting such a good example as pace-makers.

TABLE 5.—*Death Rates of Cities in East South Central States from Typhoid per Hundred Thousand Population*

	1924	1923	1922	1921	1916–1920	1911–1915	1906–1910
Louisville	1.9	3.5	8.0	5.5	9.7	19.7	52.7
Birmingham	7.5	7.7	12.5	17.0	31.5	....	....
Nashville	20.4	12.3	16.2	20.4	20.7	40.2	61.2
Memphis	41.2	13.6	8.9	9.0	27.7	42.5	35.3

TABLE 6.—*Death Rates of Cities in West North Central States from Typhoid per Hundred Thousand Population*

	1924	1923	1922	1921	1916–1920	1911–1915	1906–1910
Omaha	1.0	5.4	4.4	4.0	5.7	14.9	40.7
St. Paul	2.0	3.3	2.0	7.1	3.1	9.2	12.8
Minneapolis	2.1	1.0	1.9	1.2	5.0	10.6	32.1
Des Moines	2.8	0.7	1.5	1.4	....	....	....
Kansas City, Mo.	3.6	7.1	4.9	11.0	10.6	16.2	35.6
St. Louis	3.7	4.0	4.2	3.8	6.5	12.1	14.7
Kansas City, Kan.	4.6	0.9	7.0	4.8	9.4	....	....

TABLE 7.—*Death Rates of Cities in West South Central States from Typhoid per Hundred Thousand Population*

	1924	1923	1922	1921	1916–1920	1911–1915	1906–1910
Fort Worth	1.7	4.9	7.8	10.7	....	....	....
Houston, Texas	5.6	7.8	7.3	11.7	....	....	....
San Antonio	5.8	9.8	5.6	16.6	23.3	29.5	....
Dallas	8.2	11.6	5.8	12.7	17.2	....	....
New Orleans	10.0	8.7	10.2	9.3	17.5	20.9	35.6

TABLE 8.—*Death Rates of Cities in Mountain and Pacific States from Typhoid per Hundred Thousand Population*

	1924	1923	1922	1921	1916–1920	1911–1915	1906–1910
Oakland	1.3	3.3	3.0	1.3	3.8	8.7	21.5
Spokane	1.9	7.7	5.7	4.7	4.9	17.1	50.3
San Francisco	2.6	3.0	2.2	4.2	4.6	13.6	27.3
Seattle	3.2	2.5	2.8	2.2	2.9	5.7	25.2
Tacoma	3.9	5.9	4.0	3.0	2.9	10.4	19.0
Los Angeles	4.4	3.1	3.7	2.6	3.6	10.7	19.0
Denver	5.1	5.2	5.9	4.5	5.8	12.0	37.5
Portland, Ore.	6.1	2.9	3.3	3.0	4.5	10.8	23.2
Salt Lake City	10.1	4.0	3.2	5.7	9.3	13.2	....

TABLE 9.—*Death Rates from Typhoid in 1924*

Honor Roll (from 0.0 to 2.0 Deaths per Hundred Thousand)			
Fall River	0.0	Rochester	1.2
Hartford	0.0	Oakland	1.3
Worcester	0.5	Springfield	1.3
Trenton	0.8	Chicago	1.6
Akron	1.0	Syracuse	1.6
Milwaukee	1.0	Fort Worth	1.7
Omaha	1.0	Lowell	1.7
Richmond	1.1	Louisville	1.9
Cleveland	1.2	Spokane	1.9
First Rank (from 2.0 to 5.0)			
St. Paul	2.0	Seattle	3.2
Boston	2.1	Grand Rapids	3.4
Minneapolis	2.1	Bridgeport	3.5
Philadelphia	2.2	Kansas City, Mo.	3.6
Dayton	2.4	Paterson	3.6
Cincinnati	2.5	Columbus	3.7
Providence	2.5	St. Louis	3.7
Jersey City	2.6	Indianapolis	3.9
San Francisco	2.6	Pittsburgh	3.9
Newark	2.7	Tacoma	3.9
Yonkers	2.7	Washington	4.3
Baltimore	2.8	Los Angeles	4.4
Des Moines	2.8	Toledo	4.4
Buffalo	2.8	Cambridge	4.5
Scranton	2.8	Youngstown	4.5
Norfolk	2.9	New Bedford	4.5
Detroit	3.0	Kansas City, Kan.	4.6
New York	3.1		
Second Rank (from 5.0 to 10.0)			
Denver	5.1	Portland, Ore.	6.1
New Haven	5.1	Camden	6.3
Reading	5.4	Birmingham	7.5
Houston	5.6	Dallas	8.2
San Antonio	5.8	Wilmington	8.3
Third Rank (from 10 to 20)			
New Orleans	10.0	Atlanta	15.0
Salt Lake City	10.1	Nashville	20.4
Albany	12.6	Memphis	41.2

The cities in the Mountain and Pacific states (Table 8) are maintaining about the same relative position as for the last ten years, but on the whole do not show up as well as the cities on the Atlantic seaboard, although there seems no intrinsic climatic or racial reason why any difference in typhoid rates should exist. The 1911 to 1915 typhoid averages were not very different in the two sections, but in 1924 only three of the nine Mountain and Pacific slope cities had rates under 3, as contrasted with seven of the eleven cities on the Atlantic coast.

TABLE 10.—*Total Average Typhoid Death Rate (1910-1924)*

	Total Population (57 Cities)* Estimated by the U. S. Census Bureau Methods	Typhoid Deaths	Typhoid Death Rate per 100,000
1910	20,996,035	4,114	19.59
1911	21,545,014	3,391	15.74
1912	22,093,993	2,775	12.56
1913	22,642,972	2,892	12.77
1914	23,191,951	2,408	10.38
1915	23,740,930	2,068	8.71
1916	24,205,359	1,842	7.61
1917	24,740,068	1,647	6.65
1918	24,971,278	1,557	6.23
1919	25,526,186	987	3.87
1920	26,154,013	921	3.52
1921	26,561,469	978	3.68
1922	26,996,843	851	3.15
1923	27,365,408	851	3.11
1924	27,868,865	856	3.07

* Twelve cities are omitted from this summary because data for the full period are not available

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

TRYPARSAMIDE. — Sodium N-phenylglycinamide-*p*-arsonate. — $[(NH_2COCH_2NH).C_6H_4.(AsO.OH.ONa)]_2.H_2O$.— Tryparsamide contains 24.6 per cent. of arsenic in organic combination.

Actions and Uses.—Tryparsamide is primarily a trypanocidal agent and is proposed for use in the treatment of certain forms of trypanosomiasis (African sleeping sickness and *mal de caderas*). In the case of human trypanosomiasis due to T. gambiense it is relatively easy to sterilize the peripheral blood by a single dose of the drug, but relapses are likely to occur unless the treatment is continued for some time.

Tryparsamide has some spirocheticidal activity and has an unusual power of therapeutic penetration, especially in case of the central nervous system; this has led to its trial in certain cases of cerebrospinal syphilis. The value of the drug in these conditions, as compared with other methods of treatment, has not been conclusively determined. The best results seem to have been obtained in patients with early paresis; it is estimated that perhaps from 40 to 50 per cent. of such cases have shown varying degrees of symptomatic improvement. Tabetic affections have responded less satisfactorily, and patients with general paresis with advanced mental and physical deterioration have shown little or no improvement; on the other hand, the drug may hasten the progress of the disease in such cases. Its use is considered to be contraindicated in forms of syphilis other than that of the central nervous system, and it is held by some that it should be used in cerebrospinal syphilis only in cases that have failed to respond favorably to the arpshenamines. Mercury is frequently used in conjunction with the tryparsamide.

The toxic effects of tryparsamide resemble those of other pentavalent arsenic compounds; the worst of these is the tendency to produce amblyopia, but cases of jaundice have also been reported. Before using the drug, careful consideration should be given to the frequent production of visual injury, which may be serious and permanent. This caution is especially important if the neurosyphilis has involved the optic nerve.

Dosage.—From 0.5 to 3.0 Gm. for adults, depending on the purpose for which the drug is used. In general, the dose should not exceed 0.04 to 0.05 Gm. per kilogram of body weight, and such doses should not be repeated at intervals of less than one week. Tryparsamide may be administered subcutaneously, intramuscularly or intravenously, though the intravenous administration is generally employed. The drug is dissolved in sterile water or physiologic solution of sodium chloride. Tryparsamide should never be administered by mouth.

Manufactured by Powers-Weightman-Rosengarten Co., Philadelphia, under U. S. patents 1,280,119, 1,280,120, 1,280,121, 1,280,122, 1,280,123, 1,280,124 and 1,280,126 (Sept. 24, 1918; expires 1935) by license of the Rockefeller Institute for Medical Research. No U. S. trademark.

Tryparsamide occurs as a colorless, odorless crystalline powder (*distinction from arsphenamine compounds*). It is freely soluble in water, forming a solution neutral to litmus. It is insoluble or only slightly soluble in alcohol, ether, chloroform and benzene.

Treat the solution resulting from the assay with sulphuric acid and a slight excess of sulphur dioxide solution and boil until the odor of the latter is dispelled, then pass in hydrogen sulphide; a yellow precipitate forms, soluble in ammonium carbonate. To 1 Cc. of a solution (1:10) add 1 Cc. of diluted hydrochloric acid; a precipitate of phenyl glycinamide arsonic acid forms; further addition of diluted hydrochloric acid (2 to 3 Cc.) does not entirely dissolve the precipitate (*distinction from arsphenamine and sodium cacodylate*), but addition of 2 Cc. of strong hydrochloric acid dissolves the precipitate. Dissolve 0.5 Gm. in 5 Cc. of water, add 3 Cc. of sodium hydroxide solution (20 per cent.) and boil; the characteristic odor of ammonia is detected. To 1 Cc. of a solution (1:10) add 1 Cc. of calcium chloride solution; a precipitate of microscopic, wedge-shaped prisms forms gradually. To 1 Cc. of a solution (1:10) add 1 Cc. of magnesia mixture; no precipitate forms in the cold (*arsenate or phosphate*); but, on warming the mixture, a precipitate forms. To 5 Cc. of a 1:10 solution, add 0.3 Cc. of sodium nitrite solution, 10 per cent., cool in ice water and add 5 Cc. of diluted hydrochloric acid followed by a solution containing betanaphthol 5 per cent. and sodium hydroxide 10 per cent.; no red color is produced (*arsanilic acid*). To 1 Cc. of tryparsamide solution (1:10) add 0.2 Cc. of ferric chloride solution. No blue coloration is formed (*arsphenamine compounds*), but a brown precipitate develops, which dissolves on further addition of ferric chloride solution. To 1 Cc. of tryparsamide (1:10) and 0.2 Cc. of bromine solution; a white precipitate is formed. To 1 Cc. of solution (1:10) add 1 Cc. of silver nitrate solution; a precipitate of thin microscopic needles is formed.

When dried to constant weight at 100 C., it loses not more than 3.5 per cent. nor less than 2.5 per cent. in weight (*water of hydration*).

Transfer about 0.2 Gm. of tryparsamide accurately weighed and previously dried at 100 C. to constant weight to a 150 Cc. Erlenmeyer flask and add 5 Cc. of concentrated sulphuric acid; rotate the contents of the flask to wet thoroughly the tryparsamide, then add 1 Cc. of fuming nitric acid and heat the flask on a hot plate for one hour at a temperature of approximately 250 C. Remove the flask from the hot plate, cautiously add 0.5 Cc. more of fuming nitric acid, and heat again for five minutes; allow to cool slightly and add, in several portions, 1 to 2 Gm. of solid ammonium sulphate, agitating the contents of the flask until the nitrogen has escaped. Transfer the cool solution with the aid of water to a 500 Cc. Erlenmeyer flask and add enough water to make the total volume about 100 Cc.; add potassium iodide, 1 Gm., and gently boil until the volume is reduced to about 40 Cc.; cool, add tenth-normal sodium thiosulphate until the tint of iodine disappears; dilute with about 150 Cc. of cold water, add sodium hydroxide solution, 20 per cent., until the solution is faintly alkaline to litmus; then add diluted sulphuric acid to render it slightly acid. Finally, add 20 Cc. of a cold saturated sodium bicarbonate solution and titrate with tenth-normal iodine, using starch as indicator at the end. Each cubic centimeter of tenth-normal iodine corresponds to 0.003748 Gm. of arsenic. The amount of arsenic in the dried specimen should not be more than 25.5 per cent. nor less than 25.1 per cent.

To determine the toxicity of tryparsamide, 0.75 Gm. of tryparsamide per kilogram of body weight in an aqueous solution, the concentration of which does not exceed 10 per cent., is injected intravenously into well nourished, adult, male rabbits. Three out of five rabbits survive without serious intoxication. Young or old animals and animals that are either poorly nourished or abnormally fat, as well as pregnant females, are less tolerant and should not be used for toxicity determinations.

The Aperient Pill.—The public must be rescued from the vender of the aperient pill, and the profession must lose no time in pointing out the true way of salvation by a return to a saner and more physiologic dietary. Devitalized and refined foods must be replaced by natural, fresh and vital ones which will insure the natural stimulation of the intestinal nerve-muscle structures. Severe constipation is a marked feature in the recognized "deficiency" diseases beriberi and scurvy. And, according to Plimmer and others, it seems certain that partial vitamin starvation is responsible for much of the prevalent constipation of today.—Belfrage, S. H.: *Practitioner* **114**:82 (Jan.) 1925.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, MARCH 14, 1925

SCIENTIFIC PROGRESS AND EDUCATIONAL RETRENCHMENT

There are periods in the development of almost every project of large magnitude when its promoters are impelled to take stock of the situation that confronts them in the undertaking. In the current unrest with respect to medical education, notably in the articles and letters that have been appearing in THE JOURNAL, are reiterations of the charges that the process in vogue for training physicians is wasteful of time and money for the coming practitioner and consequently is unwarranted, particularly at a time when the rural districts are demanding medical recruits for their service. Some of the writers are outspoken against "too much schooling" in medical education; others are somewhat more specific in their indictment of "too much laboratory work" or an "overdose of scientific studies." Universal attempt at development of "the research type" of student is particularly subjected to criticism in the program for reform.

The current discussion is helpful, and may provoke wholesome innovations in the educational system. The interest that the subject has aroused in itself augurs well. At this time, especially, it may not be amiss to inquire whether, after all, the preclinical sciences have justified the somewhat dominant position that has been accorded to them in the last quarter century. If they are consuming an undue amount of time in the development of the coming practitioner, so that their participation should be curtailed, they ought at least to justify themselves in some other way. The testimony of the Medical Research Council of Great Britain,[1] in a retrospective view of the recent progress of the medical sciences, is outspoken with regard to the ways in which the preclinical sciences have contributed during the last five years to the solution of particular problems presented by the daily needs of preventive and curative medicine. The unqualified conclusion is that the most recent gains that have come to practical medicine illustrate well the general retrospect of the positions of the contributory sciences. Work that has made a real difference to the daily tasks of preventive and curative medicine in the last few years has come from the laboratories of physiology and biochemistry. It is notable also that the chief contributions coming from the new clinics have, as it happens, been in clinical studies of the functions of the heart, the regulation of the respiratory mechanisms of the body, and the excretory efficiency of the kidney, carried out by men trained to use the precise methods of physiology or biochemistry. Add to this the contribution of insulin by physiology; the newer knowledge of nutrition, with its applications of the vitamins to the prevention or cure of formidable diseases; the recent developments in heliotherapy arising from consideration of the biophysics of radiations; the interchangeability of light and certain vitamins, and the special contributions to the body of knowledge necessary for the right management of the conditions of industrial life, the avoidance of the dangers of particular occupations, the proper ventilation of factories and workshops, and the adoption of conditions under which muscular effort can be most economically and agreeably put forth, and there is cause for pride in achievement. Pathology and the related science of bacteriology have long had credit, and deservedly so, for great advances in medicine. Speaking of them with a retrospect over the last five years, the British report remarks:

> While the new ideas and powers they brought to medicine have had a profound and pervading influence, relatively small progress has been made in recent years. In this country this is in part due to the special handicaps imposed on these sciences which arise from their very usefulness in practical medicine. But in all countries bacteriology is halting for more intimate knowledge of the infective organisms and of their biochemistry, while pathology only shows promise of advance so far as it proceeds as a study of the reactions of the body to disturbance, as a part indeed of physiology, and so far as it can express its phenomena in terms of biochemistry.

Whatever our attitudes may be with respect to the besetting shortcomings of the present-day medical curriculum, so far as it tends to fail in the training of general practitioners and thus perhaps to accomplish its greatest good to the communities that medicine should serve, let us not take the chance of impeding scientific accomplishment in any revolutionary change that may be made. Here, again, the advice of our British colleagues deserves earnest attention. The apparently academic and unpractical work of today, they remark, may tomorrow give the key to a score of old problems and lead at once to new and unexpected powers. Faith must be put unreservedly in the scientific workers themselves. The best and earliest success can come only from their free and disinterested work, in pursuit of clues that may lie here or there. It need not be feared, least of all in the medical fields, in which the humanitarian stimulus is so near and lively, that practical

1. Report of the Medical Research Council for the Year 1923-1924, Committee of the Privy Council for Medical Research, London, 1924.

applications of scientific work will be ignored or forgotten in the detachment of the quest for learning. On the other hand, recent history shows that sterility is soon reached when scientific work is tied to particular practical issues and ceases to be a free search for knowledge as such.

THE FATE OF ORGANIC ACIDS IN THE BODY

Certain dietary articles contain considerable quantities of organic acids or their salts. Oranges, lemons and grapefruit, for example, are rich in citric acid; grapes contain potassium acid tartrate; apples are among the group that includes malic acid; many other fruits contain succinic acid; and benzoic acid also is not unknown in such products. When a person ingests an inorganic acid, such as hydrochloric acid, this compound functions as an acid in the metabolism. It cannot be destroyed there, and at best deleterious acidic reactions can be averted through the neutralization the ingested substances undergo. As a consequence, there is obviously a compensatory readjustment of the acid-base equilibrium in the body. Modern biochemistry has made it clear, on the other hand, that organic acids do not necessarily function in the same manner. Some of them are readily oxidized in the organism whereby they soon lose their identity as acids and may even function potentially as bases. The acid fruits may thus, in fact, lead to the excretion of a more alkaline urine.

This knowledge, firmly established in a few cases, has frequently led to generalizations that are unwarranted by the evidence already available. It is not true that all organic acids are destroyed so readily in the organism. Benzoic acid notably resists oxidation and is eliminated as benzoylglycocoll, or hippuric acid. Oxalates, present in small amounts in a few foods, also are not oxidized, and for this reason they may develop a toxic effect in the organism if administered in undue quantity. The special manifestation of the latter seems to depend on the somewhat ready precipitation of calcium by oxalic acid. Several years ago, it was shown by Underhill and his co-workers that in animals the administration of tartaric acid may lead to nephropathic consequences. The characteristic renal lesions occur regardless of the mode by which the tartrate is given, provided the latter reaches the circulation. When given by mouth, much larger doses are required than when the substance is introduced parenterally. Probably this difference is due in part to the development of diarrhea following oral administration, and the resulting rapid removal of the salt from the intestine. Perhaps the "selective action" of the intestinal cells may also play a part in preventing rapid tartrate absorption. In human subjects, Post [1] was unable to obtain evidence of albuminuria or cast formation after giving medicinal doses of Rochelle salt to normal persons, nor could he demonstrate an aggravation of an existing nephritis following oral tartrate administration.

In contrast with this, Rose [2] has demonstrated that succinic acid, even in large doses, is not a nephropathic agent, and the same is probably true of the usual food form of malic acid. The innocuousness of lactic acid and acetic acid is well known. Rose suggests that the renal toxic action of certain acids is associated with their slow or incomplete oxidation in the body. Readily oxidizable substances are probably burned to carbon dioxid and water without exerting detrimental renal effects. Acids that are oxidized with difficulty may be disposed of by excretion only. In the course of the body's efforts to eliminate them, damage to the kidney cells may result. If this is a correct interpretation, it affords an added illustration of the possible harm that may be caused by undue concentration of products that are inadequately destroyed or specially detoxicated in the organism. There are times, fortunately rare, when even the protective devices may fail to meet an emergency.

1. Post, W. E.: The Fate of Tartrates on the Human Kidney, J. A. M. A. **62**: 592 (Feb. 21) 1914.

SUGAR IN NORMAL URINE

Two features of physiologic and pathologic carbohydrate metabolism seem to be commonly accepted at present. One is the conclusion that the normal circulating sugar of the blood is the carbohydrate glucose; the other is the fact that, under those conditions familiarly termed diabetic, the eliminated urinary carbohydrate is the same sugar. For a long time it has been known also that the kidney secretion in apparent health may contain small quantities of reducing substances that have the earmarks of carbohydrates. They are found so constantly that the term glycuresis has been coined to designate their genesis or elimination. Consequently, the idea has arisen that true glycosuria represents only an augmentation or exaggeration of the almost negligible but nevertheless detectable glycuresis or sugar leakage to which every kidney is subject. The contrasts between glycuresis and what has long been recognized as glycosuria would thus be merely those of quantitative differences rather than qualitative changes in the carbohydrate output by the urine.

Such a view has made it difficult to adopt the conception of a "threshold value" for glucose in relation to the kidney. Many investigators have believed that the healthy renal organ is impermeable to glucose so long as the concentration of the latter in the blood does not exceed a threshold value fairly constant for each person under the usual conditions. If blood

2. Rose, W. C.: The Nephropathic Action of the Dicarboxylic Acids and Their Derivatives, I, Tartaric, Malic and Succinic Acids, J. Pharmacol. & Exper. Therap. **24**: 123 (Sept.) 1924.

glucose were actually concerned in the glycuresis of health, many persons might be regarded as having latent diabetes. The decision depends essentially on the nature of the so-called physiologic urinary sugars. According to Folin and Berglund [1] of the Harvard Medical School, these must consist of a considerable variety of reducing carbohydrates other than glucose and fructose. A small portion may be derived from lactose. In the main, they are derived from foreign, partly or wholly unusable carbohydrate materials present in grains, vegetables and fruits. Artificial decomposition products due to the heat used in cooking, canning and baking probably contribute a considerable share. Pentoses and pentose compounds are doubtless represented, at least when fruit is eaten. The Boston biochemists believe that the escape of such miscellaneous unusable carbohydrate material into the urine has no connection with the main carbohydrate metabolism, and, therefore, none with the various problems of diabetes, except with reference to the correct interpretation of weak but positive tests for sugar.

This debated view has more recently received support from Høst,[2] who distinguishes two kinds of sugar excretion in the urine: 1. Physiologic sugar excretion, which has no relation to the amount of glucose in the blood and which comprises sugars whose nature is not known, but which probably do not include glucose. After meals consisting of bread, as well as in urine that is concentrated, these physiologic sugars may occur in such quantities that the reduction reactions commonly employed are positive. 2. Pathologic sugar excretion, caused by the passage of the glucose of the blood into the urine when the blood sugar concentration exceeds the renal threshold. And similarly Greenwald, Gross and Samet [3] of the Harriman Research Laboratory in New York have concluded that the sugars excreted in normal urine are made up of carbohydrates that are nonassimilable or assimilable with difficulty, and of reducing substances derived from the protein of the food and from endogenous sources. The nature of those in the former group depends on the diet. This group may include lactose from milk, pentoses from fruits, and caramelized sugars and dextrins. The amounts of all these are usually small. On ordinary diets, at least one half of the sugars of the urine originate from the protein of the food or from endogenous sources. Apparently, they do not arise from nuclein metabolism. It is suggested that they may be pentoses, which are always formed from protein and, in pentosuria, are either formed in larger quantities or escape further catabolism. On this basis, the existence of a "glucose threshold" remains undenied. As the New York investigators express it, the value of this threshold varies with individuals and, probably, in the same individual at different times, and there may even be a slight variation among the millions of glomeruli and tubules that make up any one pair of kidneys; but there is no evidence whatever of the leakage of glucose through the kidney when the concentration in the blood is below a certain level. In unquestionably normal persons, on a mixed or a carbohydrate diet, not containing any large quantities of glucose, the concentration of glucose in the blood probably never reaches this threshold, and the urine probably never contains glucose. True glycosuria thus acquires a more cogent diagnostic significance.

1. Folin, O., and Berglund, H.: Some New Observations and Interpretations with Reference to Transportation, Retention and Excretion of Carbohydrates, J. Biol. Chem. **51**: 213 (March) 1922.
2. Høst, H. F.: J. Metabol. Res. **4**: 315, 1923.
3. Greenwald, I.; Gross, J., and Samet, J.: The Nature of the Sugar in Normal Urine, II, The Sugar Excretion upon Various Diets and the Influence of Diet upon Glucose Tolerance, with Some Remarks on the Nature of the Action of Insulin, J. Biol. Chem. **62**: 401 (Dec.) 1924.

Current Comment

INFLUENCES AFFECTING LACTATION

For obvious reasons the cow and the goat, among the domestic animals, have long served as experimental animals in the study of lactation. So long as the thesis of the supreme importance of "breed" or species characteristics in the regulation of milk production dominated the thinking of those concerned with its problems, there was seemingly little to be learned with respect to human mammary function so far as the quantity and composition of breast milk are concerned. Of late, however, it has been becoming increasingly apparent that food and environmental factors are by no means without their effect on lactation. If it is true, as Luce [1] has recently argued anew on the basis of careful studies on cows, that an experience seemingly as incidental as is exposure to sunlight plays a part in raising the antirachitic value of the milk, and that the cow's diet is the main factor in determining both the growth-promoting value and the antirachitic potency of her milk, the importance of the proper maintenance of the lactating individual becomes emphatic. A lesson of the same sort may be drawn from Meigs' observations in the Dairy Division of the U. S. Department of Agriculture, where the behavior of cows was compared on rations essentially alike except for their content of calcium and certain vitamins found in fodders such as alfalfa. With a poverty of these, reproduction and milk yield were unsatisfactory. Meigs has remarked that it would be surprising that a ration which contains liberal amounts of protein, of nutritive energy, and of all the mineral elements that are known to be necessary for nutrition, is so unsatisfactory for milk yield, were it not for the recent work on vitamins.[2] It seems to be generally believed now that if most cows in a herd fall off markedly in milk yield, their rations are in some respect deficient. Perhaps it is justifiable to regard the lowering of the milk yield

1. Luce, Ethel M.: Further Observations on the Influence of Sunlight on the Growth-Promoting and Antirachitic Properties of Cow's Milk, Biochem. J. **18**: 1279, 1924.
2. Hart, E. B.; Steenbock, H.; Hoppert, C. A.; Bethke, R. M., and Humphrey, G. C.: J. Biol. Chem. **54**: 75 (Sept.) 1922.

and the failure to breed as the cow's means of defense against the still more serious results that are likely to follow long-continued drains on the body stores of the various dietary essentials. One cannot study these modern investigations on the domestic animals without acquiring the impression that perhaps clinicians, in the care of lactating mothers, have heretofore given all too little attention to the newer information regarding such once unsuspected factors that may profoundly affect the maternal functions.

THE VITAMIN CONTENT OF MILK FAT

The growing appreciation of the fact that the fat of milk, particularly as it is represented in butter, is poor in antirachitic potency, despite its well attested richness in vitamin A, is likely to bring about a revaluation of milk and its products from the standpoint of their content of fat-soluble vitamins. It is impossible to read the now enormous popular as well as scientific literature regarding the nutritive value and dietary importance of milk without becoming impressed with the emphasis that has been given to the significance of the vitamins contained in this food product. Butter, cream and milk are commonly put into a "preferred" class with respect to vitamin A in advice regarding the selection of a diet.[1] Milk and its products have had excellent exploitation in these columns with respect to their outstanding merits in national nutrition. It is as unwise as it is unscientific, however, to allow propaganda or our enthusiasms to give us a false perspective. Whatever its virtues may be, milk cannot always be depended on, unaided, to avert occasional unsatisfactory nutritive conditions. The occasional appearance of rickets even in breast-fed infants bears witness to this. Cod liver oil, for example, far exceeds milk in antirachitic potency. And now it is becoming evident further that, in respect to their content of vitamin A, excellent qualities of dairy butter compare only feebly with cod liver oil of good quality. Laboratory studies [2] have shown that summer butter produced under favorable conditions may have a vitamin potency equal to one-hundredth that of first quality cod liver oils. Holmes has pointed out that even though an infant may be especially fortunate as regards its vitamin body reserve at birth, this cannot compensate for a vitamin-deficient diet for more than a relatively short portion of its growth period. In view of this situation, it is evident that the infant's diet must be chiefly relied on as the source of the vitamins required for its well being. Since, during infancy and early childhood, milk forms the large portion or the whole of the child's diet, Holmes wisely argues that the vitamin content of milk is a question of extreme importance to those responsible for the child's development. When, for any reason, the volume of fat in an infant's diet is greatly reduced, it is well to know that the lost vitamins can be replaced in concentrated form.

1. For example, in Pamphlet 725 on Food: Why? What? How? issued by the American National Red Cross, Washington, D. C., June, 1924.

2. Holmes, A. D.: Vitamin Potency of Cod-Liver Oils, XI, Butter Fats Produced on Summer Feeds, Indust. & Engin. Chem. **17**:75 (Jan.) 1925.

SCARLET FEVER ANTITOXIN AND SCARLET FEVER SERUMS

In this issue of THE JOURNAL appear articles relative to the preparation of the Dick scarlet fever toxin and antitoxin, and on the immunization of school children against scarlet fever. In this connection, it may be well to emphasize the present status of various preparations that have been elaborated for use in the prevention and treatment of this disease. Readers no doubt are familiar with the work of Drs. Dochez and Blake, who also have utilized a type of streptococcus believed to be the specific etiologic organism of scarlet fever, and who have prepared a serum for the treatment of the disease. The serum used by Dr. Blake in securing the results reported some weeks ago is prepared by injecting a horse with culture medium and into this inoculating living streptococci, which cause abscesses producing toxin against which the horse develops antibodies. The serum derived from the horse is an antistreptococcus serum, and differs from Moser's scarlet fever antistreptococcus serum only by the method of inoculation and from other antistreptococcus serums in that the horse has been injected with the streptococcus isolated by Dochez and Blake from patients with scarlet fever. The scarlet fever antitoxin prepared by the Dicks is secured by injecting a horse with a toxin prepared from the filtrate of cultures of specific streptococci isolated from cases of scarlet fever. With this toxin, the Dicks report, they have been able to produce symptoms in human beings that closely resemble the symptoms of scarlet fever. The toxin therefore is injected into a horse. The serum obtained from the horse is a scarlet fever antitoxin just as diphtheria antitoxic serum is prepared by inoculating a horse with the particular toxin that is developed by the diphtheria bacillus. The latter statement is true, of course, only to the extent that the Dick toxin is actually the specific scarlet fever toxin. The matter is complicated still further by the fact that the Dick antitoxin is concentrated, and it is claimed less likely to produce serum reactions than the unconcentrated Dochez serum. If the work of both Dochez and Blake, and George F. and Gladys H. Dick is confirmed, and there already seems to be evidence that the work of all the investigators has been well carried out, it would seem to be absolutely necessary that the physician clearly understand the difference between the products used and their methods of preparation. No doubt, also, manufacturers and those responsible for securing proper labeling of medicinal products will see to it that these preparations are designated in a manner that will clearly differentiate to the user the material that he employs.

Composition of Blood Depends on Food Eaten.—It is high time that some one rediscovered the receptaculum chyli and thoracic duct. When these are born again into the world of thinking therapeutics we may reawaken to the fact that the products of digestion are really and actually poured straight into the blood stream, and that consequently the composition of the blood depends mainly on what we eat and how we excrete.—Williams, Leonard: *Practitioner* **114**:73 (Jan.) 1925.

Association News

THE ATLANTIC CITY SESSION

The Scientific Exhibit

The Committee on Scientific Exhibit calls attention to the fact that all applications for the Scientific Exhibit must be in the hands of the director before March 23. Any who desire an application blank may obtain it by sending a request addressed to Director, Scientific Exhibit, American Medical Association, 535 North Dearborn Street, Chicago. From the applications received so far, the exhibits at the Atlantic City Session promise to be of great scientific value and interest.

Attractive Features of the Session

The Local Committee of Arrangements announces that some of the attractive features of the coming session at Atlantic City, May 25-29, will be the broadcasting of the general opening meeting from the Steel Pier, over the wires of the Atlantic City Station, WPG; also the installation of amplifiers in all the large halls, so that the voices of speakers can easily be heard. All the section meeting places will be practically on the Boardwalk, and so close to one another that one can go very quickly from hall to hall.

Plenty of Hotel Accommodation Assured

The Local Committee of Arrangements announces that there will be ample hotel accommodations for every one at Atlantic City. While some of the larger hotels have already engaged nearly all their rooms, owing to the unusually large demand for accommodations, there are still many hotels of moderate and smaller size that have enough space for every one. Unlike so many cities, in which a small hotel means poor service and accommodation, the small and moderate sized hotels of Atlantic City have practically all the comforts found in the larger ones elsewhere. There is running water in almost every room, as well as a great many more rooms with private baths than one would expect to find in such sized hotels. Therefore, one does not have to go to an expensive hotel to obtain comforts.

A list of hotels and rates was printed in THE JOURNAL, January 24, p. 290.

ANNUAL CONGRESS ON MEDICAL EDUCATION, MEDICAL LICENSURE, PUBLIC HEALTH AND HOSPITALS

Held in Chicago, March 9, 10, 11 and 12, 1925

DR. RAY LYMAN WILBUR, Stanford University, Calif., in the Chair

MEDICAL EDUCATION

MARCH 9—MORNING

Landmarks in Educational Progress

DR. RAY LYMAN WILBUR, Stanford University, Calif.: As we look back, we are conscious of the fact that we have a certain number of disappointments along with our satisfactions. The laboratory has been most serviceable in bringing the scientific spirit into medicine; it has been absolutely essential to the development of medical education in this country; but we expected too much of the laboratory. We thought that type of training would make physicians out of our students. We thought, too, that it was going to, in one way or another, relieve us of the use of our senses in clinical work. You are all familiar with that disappointment. With each new discovery we had been hoping that there was some panacea discovered; that instead of bothering to make a careful study of the patient we could take a little of his blood and a little of the urine, perhaps some cerebrospinal fluid, and send it to the laboratory and get something back on a piece of paper that would settle the whole question for us. The laboratory, too, for a while led us over to one side in the matter of handling mental cases of various sorts, and we have seen a great growth of certain religious elements in the community attempting to take up that phase of the work which belongs to the medical profession. I think we can say that that is beginning to ebb, somewhat. At the same time, because of our laboratory points of view, we have neglected certain fields of therapeutics and consequently we have seen the development of various cults and "isms" all around various forms of treatment. I think we can say that we are at fault in permitting anything of that kind to come about.

As we survey the situation today, we find that we have projected in medical education the ordinary academic methods of training. Probably the greatest contribution of all has been the bringing of the academic spirit into medical education.

As we look back over twenty-five years in various fields, let us keep in mind the fact that no goal has been reached; that everything still lies before us, and that the need of the training of the senses of the body of the physician so that he can obtain information in regard to the patient is more evident today than ever before, but that the only thing the microscope, the laboratory, has done is to increase the range of his senses. He still has to make the same valuations, the same judgments, and we have to train the medical student in the use of his senses if we wish to turn him out as a clinician, and in the long run, that is the one thing for which we are striving.

TWENTY-FIVE YEARS' PROGRESS IN MEDICAL EDUCATION

Entrance Requirements, Promotion of Students, etc.

DR. JOHN M. DODSON, Chicago: In the remarkable progress of medical education in the last quarter century, the development of the administrative work of the medical school has been an important feature. A lay clerk whose duties consisted of receiving and making record of the fees paid, and of entering the results of the final examinations has been supplanted by a dean, who is a member of the faculty. With full knowledge of the standards and functions of the school, intimately acquainted with both students and faculty, he is the connecting link between the two groups. The requirements for admission have been increased from little more than the ability to read, write and cipher to the completion of at least two years of college work. Medical schools, so far from soliciting students by every legitimate means, now select those to be admitted from a large excess of applicants. No step in the program of the medical school is more important than this one, and it is primarily a function of the dean. To admit only students of character and ideals, as well as with the necessary ability and attainments; to see that the instruction is "individualized" so that each student has opportunity to develop his own talents in the most effective way; to bring about, from time to time, such changes in the curriculum and methods of work as will adjust them to the frequently changing trends of medical science and practice—these are among the important duties of the dean. Never were the indications more clear and definite than they are now that decided changes must be made in the present program of the medical schools if their students are to be equipped to render the full measure of service which the developments of medical science have made it possible for them to render.

Buildings, Physical Equipment, Finances and Faculty

DR. BURTON D. MYERS, Bloomington, Ind.: In 1904 there were 160 medical schools in the United States and 28,142 medical students, 20 per cent. of whom were graduated that year. In 1919 there were eighty-five medical schools and 12,930 students of medicine, 20 per cent. of whom were graduated that year. In 1924 there were eighty medical schools and 17,728 medical students, 20 per cent. of whom were graduated that year. In 1919, though there were less than half the number of students enrolled in 1904 (46 per cent.), and there were only half the number of medical schools (eighty-five) to carry the load, so there was an average of 152 medical students per school, a decrease in average teaching load of 13 per cent. over 1904. In 1924, the situation had materially changed. The number of medical students

enrolled had increased to 17,728, and the number of medical schools had been reduced to eighty, with an average enrolment of 222 per school, a load 26 per cent. heavier than in 1904, and 46 per cent. heavier than in 1919. Today we have one physician to every 724 people in the United States; but since the number of medical students in proportion to population is only 43 per cent. of the number in 1904, we may expect this ratio of physicians to population to continue to change to 1,000 or more to each physician unless the present tendency is checked. From 1914 to 1924 there was a net gain of approximately 400 physicians annually in the United States. During this decade the total number of graduates exceeded the loss by death by only 13 per cent., while increase in population was about 15,000,000. It will take a gain of 1,500 physicians a year to give us one physician to the thousand in the annual gain of 1,500,000 in population.

Schools have endeavored to stem the rising tide of medical enrolment by: (1) definitely limiting the number of students admitted; (2) quantitative increase in entrance requirements; (3) a qualitative increase in entrance requirements, and (4) material increase in fees, especially for the out-of-state students. The quantitative and qualitative increase in entrance requirements beyond high school graduation eliminates about 50 per cent. of would-be matriculates.

In the series of articles by Dr. Pusey, President of the American Medical Association, the view is held that the lessening number of doctors of medicine, affecting chiefly if not wholly the rural districts, is due to entrance requirements so high as to eliminate all but students who have from $8,000 to $10,000 at hand for the seven year course following high school and preparing for the practice of medicine. This argument I believe untenable, for there are many, many students doing premedical work in colleges on the accredited list of the Council on Medical Education and Hospitals of the American Medical Association and doing their medical work in splendid Grade A medical schools, paying all their way and completing the seven years, including a year of hospital work, for $4,000. I know boys entirely self-supporting who clear enough in summer vacation to pay all their expenses during the school year. I know medical schools in which 50 per cent. of the students do work to make a part or all of their way. While it is true that the cost of medical education has increased, the remuneration for the work the student does has also increased; indeed, the student who qualifies in some trade for membership in a union and works in summer vacations at labor union wages makes a far greater percentage of the total cost of his school year than was possible in 1890 or 1900. It is no more difficult for the student with energy to make his way today than it was twenty or thirty years ago.

We in Indiana feel a moral obligation, so far as an economical administration of funds appropriated by the state makes possible and without lowering educational standards, to provide opportunity for every adequately qualified Hoosier boy, who so desires, to study medicine. It is not for us to say that one physician to every 724 or 1,000 people is sufficient. Academically, this may be true; but the laws of supply and demand should operate here as elsewhere and without any attempt at artificial control. In the last five years, the medical schools of the United States have accommodated an increase in enrolment of 37 per cent. Now, if medical school enrolments continue to increase at the rate of 1,000 a year for the next six years, and judging by known increases in premedical enrolments we may expect this, it will give us an increase over our present total enrolment of 33⅓ per cent. Provision for accommodation of this increase involves a consideration, first, of teaching staff, and secondly, of physical equipment. If we may assume that the teaching staffs are now carrying a full load, then an increase of one third in enrolment would seem to call for an increase of one third in the teaching staff. More careful consideration of the matter, however, reveals the fact that an increase of 6,000 in total enrolment means an average increase of seventy-five per school, and still further an average increase of nineteen in each class of each school. Such an increase in enrolment would certainly not call for a very great increase in departmental budgets, since it would involve the appointment of no new senior men, but could probably be cared for by the addition of an instructor in each major department.

Physical facilities for an increased enrolment of 33⅓ per cent. may be provided by: (1) new buildings and equipment; (2) a readjustment of schedule providing for fuller utilization of existing buildings and equipment. Laboratories in histology, physiology, etc., are commonly used for major courses only one semester. They could be used each semester, as is the case in departments of biology. This would require increase in staff, but no greater than would be required to accommodate the same increase in enrolment in increased laboratory space. The same end, accommodating an increasing number of students without increasing physical equipment, could be accomplished by condensing courses, having the same students in anatomy work forenoon and afternoon in the same laboratory, completing dissection in one semester or one quarter. There is the summer quarter when buildings and equipment lie relatively idle. The utilization of this quarter would make enrolment of two sections possible; one, say, in September, completing in June; another, January 1, completing nine months later in September. The adoption of this plan involves the adoption of the four-quarter system, but it is probably the best method of accommodating an increased enrolment without increasing physical equipment. To maintain efficiency and conserve investigation time, this arrangement involves an increase in staff with any three quarters constituting the teaching year. Still another method consists in splitting the fall semester into two nine weeks' teaching units. One group of students begins the year in September and ends in June; the other students begin their year at midsemester, about November 10, and complete it at the end of a nine weeks' summer session, about August 10. At Indiana University we have been experimenting with the latter plan. It has the advantage of not conflicting with state board rules in that each school year begins in one and is completed in the next calendar year. All things considered, however, the quarter system, with September-June and January-September sessions, is probably the best adjustment. This plan would be facilitated by deleting the antiquated state board rule relating to two school sessions beginning within the same calendar year. Any one of these plans involves schedule adjustments which different schools would work out in different ways, so a discussion of them here would probably not be profitable. It is obvious that the fullest utilization of teaching facilities may fairly be expected of us, but this does not permanently solve, but only postpones the time when additions to physical equipment must be made, either by enlargement of existing plants or by the building of additional ones.

Progress in Anatomy Since 1900

DR. C. M. JACKSON, Minneapolis: The transition from the proprietary system to the university basis in American medical colleges has revolutionized the medical curriculum, including anatomy. Higher premedical requirements have resulted in medical students able to do more thorough and scientific work. The anatomy teachers have likewise improved in quality. The former part-time teacher (usually a surgeon) has been almost entirely replaced by the full-time, professionally trained anatomist, devoting himself exclusively to teaching and research. The scope and content of anatomy have also greatly expanded. The former narrow concept of gross anatomy has widened to include microscopic anatomy, histology, embryology and experimental morphology. Thus, anatomy, formerly the "handmaid of surgery," has achieved unity as an independent biologic science of intrinsic interest, concerned with the fundamental problems of human form and structure. As a basic subject in the medical curriculum, the new anatomy has increased in value. Experience has demonstrated the futility of the old-fashioned "short cut" method, which attempted to select merely isolated anatomic facts susceptible of specific clinical application. A working knowledge of the human body as a biologic mecha-

nism provides a better approach to physiology, pathology and clinical medicine. Marked improvements are evident in facilities as well as modes of teaching in all phases of anatomy. In general, lectures are less emphasized. Individual laboratory work gives better student training in scientific methods. Electives provide increasing opportunity for more advanced work, both undergraduate and graduate. There is an encouraging tendency toward cooperation between anatomists and other scientific workers, both preclinical and clinical, in order to improve medical education and to facilitate the solution of medical problems.

Twenty-Five Years' Progress in Biochemistry

DR. A. P. MATHEWS, Cincinnati: The great development of biochemistry in the last twenty-five years is due to the discovery of the constitution of the proteins by Kossel; to the work of Atwater and Benedict, at about the same time; to the discovery of the active principle of the suprarenals, the first of the internal secretions to be identified, by Abel, Takamine and Aldrich; to the discovery of vitamins, and to the foundation of our knowledge of hydrophilic colloids by Sir William Hardy in 1898. Coincident with this great advance in knowledge there has occurred great progress in teaching biochemistry. The first separate laboratory for physiologic chemistry, properly speaking, in this country appears to have been that of Chittenden at Yale, established in the Sheffield Scientific School in 1882.

Nothing demonstrates more clearly the position of a science than the number and character of the journals devoted to publication of research in that science. Twenty-five years ago there were no journals in the United States, England or Europe, outside of Germany, devoted to biochemistry, and there were but three or four in physiology in the world. The only journal devoted exclusively to physiologic chemistry at that time was that founded by Hoppe-Seyler, the *Zeitschrift für physiologische Chemie*. The science had no journal in French, Italian or English. The development that has ensued in the twenty-five years just closing is certainly a source of great pride to all American biochemists. To it we have each contributed our share, big or little. Today every medical college has a laboratory of biochemistry with a professor and a staff who devote their whole time to the furtherance of the science and its instruction. Today we have several journals in this country alone devoted wholly to biochemistry and its applications; and others not exclusively biochemical which publish a large amount of original investigation in biochemistry. The science in America is now on a par with that in any other country. There are biochemical journals in English, French, German and even Japanese.

As regards material equipment and personnel, the progress has been no less remarkable. In every first class institution there is now a separate department with a budget often larger than the whole budgets of most medical colleges twenty-five years ago. The separation of biochemistry was often difficult to achieve, both chemistry and physiology seeking often to place the new development as a subordinate branch in their fields. Eventually, however, independence was won. Large, well manned laboratories with from one to three full-time men in each are now found not only in practically all medical colleges, but also in several of the leading hospitals and in research institutes in colleges of agriculture, and in schools of nutrition and education. Today the students enter the medical college with general inorganic and organic chemistry and often with quantitative and theoretical chemistry in addition. They are ready to proceed at once to the study of biochemistry proper. The teaching staff is now composed not of practitioners, teaching biochemistry on the side, but of men actively engaged in increasing knowledge. In some medical colleges there are departments of pathologic or clinical chemistry as well as of biochemistry proper.

The time allotted is still inadequate for the instruction of medical students, and averages about 180 hours, all told. In such a brief time, only the rudiments can be taught. With the raising of the requirement for entrance to three or four college years, the preliminary chemistry of fats, carbohydrates and proteins can be taught before entrance to the medical course proper, leaving 180 hours to be devoted to the real subject of biochemistry. In my opinion, the first year of medical instruction should be divided into four equal parts so that one fourth of a student's time should be given to gross anatomy, one fourth to microscopic anatomy and neurology, one fourth to physiology, and one fourth to biochemistry.

Looking ahead, it may be said with little danger of contradiction that the whole future of medicine and, indeed, of mankind is bound up with biochemistry more than with any other science. The physician, the public health official, the industrial physician, the farmer, the manufacturer of food products of every nature, every mother who has a growing child, are all baffled by our ignorance in the field of biochemistry. Biochemistry is not alone a science with medical applications. While its relation to medicine is probably of paramount importance, it is far broader than this application. It suffers today from its too exclusive connection with medical schools. Biochemistry should be a department of the university, coordinate with other scientific departments.

DISCUSSION ON TWENTY-FIVE YEARS' PROGRESS IN MEDICAL EDUCATION

DR. CHARLES R. BARDEEN, Madison, Wis.: The most interesting features of the development of medical education in the last twenty-five years from the laboratory side is the introduction of a dynamic point of view in place of a static. There we go back to the point at which physics ceases to deal with matter and deals with energy. Instead of being interested nowadays in getting the student to learn a lot of detail unintelligently, the teacher of anatomy is becoming more and more interested in trying to get the student to work intelligently in relatively simple fields. He takes an interest in how that structure is developed and what the structure does.

DR. WALTER L. BIERRING, Des Moines, Iowa: This has brought out more definitely the need for a closer coordination between the fundamental branches and the clinical subjects. It has brought out definitely the great need of provision for the teachers in the fundamental sciences. I do not know how these advances in the fundamental sciences will affect licensure requirements, which are so bewildering that they have almost confused the entire problem. The requirements have not kept pace with the advance in the medical sciences.

DR. W. A. PEARSON, Philadelphia: Biochemistry has been looked on simply with an attitude of tolerance rather than an attitude of development. Four fifths probably of the progress in medical advancement has been due to biochemistry, directly or indirectly.

DR. RAY LYMAN WILBUR, Stanford University, Calif.: The point that Dr. Mathews made in regard to what I said was well taken. The thing that the laboratory has brought in, this scientific method, has made him feel that the laboratory has been inadequate in its presentation of practical solutions to many clinical problems. The very fact that the scientific method has not been appreciated by the practitioner has been one reason why he has been disappointed in the achievements. And yet, as you heard them enumerated by Dr. Mathews, I think every one must have been impressed with the marvelous advances made in these particular fields.

DR. JOHN M. DODSON, Chicago: I should like to emphasize simply this point, that when the revision of the curriculum, the change in our methods of instruction with a purpose perhaps of saving time, is taken up for discussion it be done without the purpose of meeting any particular limited, fancied emergency; that it be done from the broad, general standpoint of what is best for the profession and the community, viewing our present state. The physician cannot spend a lifetime getting ready, but he must be prepared to enter into independent work at a reasonable age and reasonable time. By what methods, by what arrangement of premedical work, on the one hand, and specific medical instruction and clinical practice, on the other, can he best be prepared for service?

(To be continued)

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Demonstration Clinic Made Permanent.—The Los Angeles Child Guidance Clinic was recently established permanently by the division on prevention of delinquency, National Committee for Mental Hygiene, following the demonstration conducted for one year by Dr. Ralph C. P. Truitt. The clinic will continue to be housed in the Anita Baldwin Hospital. It is supported by the Community Chest, with a budget of $25,000. The board of directors of the Southern California Society for Mental Hygiene will act as the board of directors for the clinic. The officers are: Rev. Edwin P. Ryland, president; Drs. Henry D. Eaton and Etta G. Gray, vice presidents, and Mr. John Stevens, secretary. Dr. Edgar Van Norman Emery is director.

DISTRICT OF COLUMBIA

Chiropractors Become Vaccinated.—Three of the six chiropractors held in the quarantine station of the District of Columbia because they refused to be vaccinated against smallpox have capitulated and were vaccinated within the last few days by a local physician. They agreed to vaccination with the understanding that Dr. Fowler, District health officer, would drop the charges against them for violation of the law. Dr. Fowler was concerned with enforcement of the law and not with punishment of individuals, and he accordingly had the charges pending in the courts against these offenders dismissed. Those vaccinated were Harry Cosper, Gertrude Coffee and William P. Montgomery. Warrants are still pending against several other offenders who have refused to be vaccinated; and John Tighe and Thomas Elias are still held in the quarantine station. The latest victim of smallpox in the District is Mrs. Pearl Wells, aged 32; two special nurses assigned to her care had previously died.

FLORIDA

Waitress a Typhoid Carrier.—The state health authorities of Florida were recently notified by the New York State Health Department that three of four cases of typhoid fever reported from a hotel in that state had been served by a waitress who had been engaged by the hotel only a month previous to the onset of these cases. This woman was interviewed just as she was about to take a train for Florida where she had been engaged as a waitress for the winter. She was examined in Florida and the second specimen was positive for the typhoid bacillus.

ILLINOIS

Health Week.—The governor has proclaimed the period from April 26 to May 2 as Health Promotion Week in Illinois. This will permit the state, in common with other states, to celebrate May Day as Child Health Day.

Mattoon Chiropractors Guilty.—Nettie Rupert was sentenced to one year in jail, and V. C. Wright and L. Glenn Barker to a year at hard labor on the penal farm, each also being fined $500, it is reported, in the county court at Charleston, February 24, for violating the medical practice act. The three defendants were chiropractors from Mattoon.

Instruction for Prospective Mothers.—Stating that Illinois has been backward in maternity and child hygiene work, compared with other states, the state commissioner of health announces that correspondence courses of instruction for prospective mothers have now been arranged. Every prospective mother in the state, who desires, may enroll. The course will begin with nine lessons in antenatal instruction. Practical questions dealing with preventive problems will be promptly answered by especially qualified physicians but treatment will be left entirely to private physicians. This is part of a program in maternity, infant and child hygiene, which is a cooperative undertaking participated in by the state medical society, the state federation of women's clubs and other organizations.

Chicago

New Physiology Building.—The new home for the departments of physiology, physiological chemistry and pharmacology at the University of Chicago will be a six story building, facing Fifty-Eighth Street, with its entrance where Ingleside Avenue now runs, the avenue having been vacated for that purpose. It will be a unit of the group of buildings for medical education which the university will erect in the near future, and for which funds have been provided independently of the university's $17,500,000 development program.

Chicago's Health in 1924.—There were 31,447 deaths reported to the department of health during 1924 up to December 19. The annual death rate per thousand population was 11.05. There were fewer deaths from diphtheria in 1924 in Chicago than for any year since 1867, when records were first kept. There has been a decided decrease in these deaths since 1921, the result of the application of preventive measures. There were forty-seven deaths in Chicago from typhoid in 1924, which was fewer than in 1923, but higher than for six years prior to 1923. More than 21,000 cases of venereal disease were reported in 1924, against 18,000 in 1923. The infant death rate was the lowest the city has had—76.9 per thousand births. Two hundred and seventy-one cases of smallpox were treated at the isolation hospital and only one death—that of an infant—occurred. The bureau of food inspection of the city health department inspected about 25,000 dairy farms, 225 country creamery and pasteurizing plants and 580 milk distributors, from which Chicago receives its milk supply. No cases of contagious disease have been caused by infected milk, although 1,100,000 quarts are consumed daily. To control the safety of the public water supply of the city, about 800 tests for residual chlorin and forty-five bacteriologic examinations were made daily.

Society News.—Dr. John Leeming addressed the Chicago Society of Industrial Medicine and Surgery, March 2, on "Some Difficulties in the Operation of Workmen's Compensation Act," and Dr. Carl Beck spoke on "Plastic Surgery of the Crippled Hand."——The Chicago Roentgen Society had a symposium on the diagnosis and treatment of duodenal and pyloric ulcers, March 13, in which Drs. Dean Lewis, Albert E. Halstead, Milton M. Portis and R. D. Carman took part. ——At a meeting of the Chicago Surgical Society, March 6, at Mercy Hospital, Dr. George Halperin spoke on "Post-operative Massive Collapse of the Lung," Dr. Philip H. Kreuscher on "The Substitution of the Erector Spinae for the Paralyzed Gluteal Muscles—A Stabilizing Operation," and Dr. Paul B. Magnuson on "Anatomy and Physiology of the Lower Back as Applied to Causes of Backache."——At the regular meeting of the Chicago Pathological Society, March 9, among others, Dr. Lemuel E. Day spoke on "Foot and Mouth Disease," and Dr. Max Pinner and Henry C. Sweany on "A Pathogenic B. Subtilis from a Patient Having Chronic Tuberculosis."——The Chicago Council of Medical Women will hold a dinner conference at the City Club, March 24. Dr. Florence D. Johnston will speak on "Recent Literature on Curettage in Uterine Hemorrhage"; Dr. Leda J. Stacy, Rochester, Minn., on "Treatment of Uterine Hemorrhage," and Dr. Mary E. Hanks on "The Roentgen Ray in Uterine Hemorrhage."

INDIANA

Senate Resolution.—A resolution was introduced in the state senate recently by Senator Dickerman, Marion, requesting Congress, as a matter of national defense, to enact such legislation as may be needed to enable the federal government to wage an aggressive campaign throughout the nation against venereal diseases.

Quacks Turn State's Evidence.—At the January meeting of the Indiana State Board of Medical Examination and Registration, two witnesses, who had worked in quack shops in Indianapolis and other cities, turned state's evidence. The cases before the state board were those of Dr. George L. Dickerson, who operated under the name of Dr. Dickerson and Associates, 157 North Illinois Street, and Dr. Edward D. Porter, who operated the Marion Medical Clinic, 149 North Delaware Street, Indianapolis. The result of the hearing was that the licenses of these men were revoked on the charge that each had loaned his license to nonmedical men. The *Journal of the Indiana State Medical Association* says that attachés testified that the Dickerson outfit obtained patients by distributing a pamphlet, "Vim, Vigor and Vitality," and sold pills for as much as $80 per hundred. Supposedly

these pills of "animal extracts" came from laboratories in London and Paris, but in truth they were made in a small room in the rear of Dickerson and Associates' office, of cheap, harmless material. Figures in possession of the state board indicate that the gross receipts of these quackeries and those of the Indiana Medical Clinic, 31 West Ohio Street, Indianapolis, which was recently closed, amounted to more than $100,000 per year.

KANSAS

License Revoked.—The license of Dr. John R. Montgomery, Lincoln, Neb., to practice medicine and surgery in Kansas was revoked by the state board of medical registration and examination, at a regular meeting of the board, February 10. The complaint was based on a charge of forgery in the second degree. According to the Kansas state board, Dr. Montgomery is now serving sentence in the state penitentiary, Lincoln, Neb.

Society News.—A joint meeting of the medical societies of the counties in which are located Topeka, Lawrence and Kansas City, was held at Lawrence, February 19. After a subscription dinner, an address was given by one member of each society.—The Northeast Kansas Medical Society will meet in Topeka, in March; the Golden Belt Medical Society, in Topeka, in April, and the Kansas State Medical Society, in Topeka, in May.

KENTUCKY

Personal.—Dr. Guy P. Grigsby, Louisville, has been named surgical director of the new West Baden Hotel clinic, and will leave Louisville, April 1, to take up this work.

MAINE

Society News.—At the annual meeting of the Cumberland County Medical Society, Portland, February 4, Dr. W. Bean Moulton was elected president; Dr. Alphonso N. Witham, vice president, and Dr. George O. Cummings, secretary-treasurer, for five years. Dr. Millard C. Webber was appointed a committee of one to bring to the attention of the state association at its next meeting the matter of presenting to every member of the legislature a subscription to *Hygeia*, the journal of individual and community health, published by the American Medical Association.

MARYLAND

Conference on Law Enforcement.—At a conference of physicians, coroners, hospital superintendents and undertakers, March 4, in the offices of the Baltimore City Health Department, Dr. C. Hampson Jones, health commissioner, stated that Baltimore physicians refusing to comply with the provisions of the law regarding the delivery of death certificates, will be arrested, and that irregularities in the removal of bodies must cease. Permits are required under the law before any disposition of the dead can be made.

Society News.—At a meeting of the Section on Ophthalmology, Baltimore City Medical Society, March 7, at the Medical and Chirurgical Faculty Building, Dr. Basil Graves, London, England, gave an address on "The Value of the Slit Lamp in Ophthalmic Diagnosis." Dr. Willima Holland Wilmer, Washington, spoke on "Clinical Observations with the Slit Lamp." A presentation of cases followed. At a general meeting of the Baltimore City Medical Society, March 6, members of the medical departments of the University Hospital read brief papers on general medicine. The speakers were: Drs. Gordon Wilson, John G. Huck, Julius Friedenwald, William H. Smith, Irving J. Spear, Harold R. Peters, Harvey G. Beck, Sylvia L. Johnson, Louis A. M. Krause and Maurice C. Pincoffs.

Chiropractic Student Detained.—Action has been taken by the director of the bureau of communicable diseases, Baltimore City Health Department, for the arrest of two students from the Chiropractic Research University, Washington, D. C., where they were exposed to smallpox. One of these students is a woman, who, thus far, has escaped arrest; the other, Barney Spector, refused vaccination in Baltimore, and a warrant was sworn out by a health officer. Spector asked for a jury trial. On objection by Dr. John F. Hogan, director, bureau of communicable diseases, that he had broken quarantine, bail was refused, and Spector was taken to Sydenham Hospital to be detained until he decides to be vaccinated or until the period of incubation of smallpox has passed.

MASSACHUSETTS

Registrations Suspended.—The state board of registration in medicine conducted a hearing, February 12, at which the registration of Dr. Thomas W. Leavitt, Malden, was suspended for one year for violation of the prohibition law. The registration of Terrence T. Kinlin, Lowell, was suspended for six months for violation of the Harrison Narcotic Law.

MICHIGAN

Personal.—Dr. Hugh Cabot, dean of the University of Michigan Medical School, Ann Arbor, spoke at the recent dedication of the University of Colorado Medical School and Hospital, Denver, on "The Development of Organized Clinical Teaching."——Dr. Hugo A. Freund, Detroit, has been reappointed a member of the board of health.

Summer Public Health Session.—The University of Michigan announces that the summer session in public health, sponsored last year by the U. S. Public Health Service, will be repeated this summer from June 22 to July 31. Twenty courses, to meet the needs of public health workers and those who anticipate careers in public health, will be conducted by members of the faculty of the University of Michigan and special instructors of national reputation. Information may be obtained from the director, Division of Hygiene and Public Health, University of Michigan, Ann Arbor.

Postgraduate Conference.—The Michigan State Medical Society held a postgraduate conference at Jackson, for the Second Councilor District which closed, February 19. The *Journal of the Michigan State Medical Society* says: The cooperation of the Ingham and the Jackson County Medical Societies was most enthusiastic for the success of this conference. Among the speakers at the Jackson conference were Drs. Kellogg Speed and Isaac A. Abt, Chicago; Dr. Hugo A. Freund, Detroit; Dr. George H. Ramsey, Lansing, and Drs. Elmer L. Eggleston and Martin A. Mortenson, Battle Creek. The public meetings of this conference were addressed by Dr. J. S. Pritchard and Dr. Gotthelf Carl Huber on "The Physical Basis of Heredity."

MISSOURI

Dr. Woolley Expelled.—The Jackson County Medical Society, February 24, expelled from membership Dr. Paul V. Woolley, Kansas City, who is reported to be allied with a concern advertising a "rupture cure."

Joint Meeting.—The Jackson County Medical Society met with the Kansas City Dental Society, March 3, at the City Club, Kansas City. The speaker of the evening was Wallace Seccombe, D.D.S., dean, Royal College of Dental Surgeons, Toronto, whose subject was "Diet and Its Relation to Teeth and Health."

NEW MEXICO

Typhoid Fever Increasing.—The bureau of public health of New Mexico reports that typhoid fever is on the increase in the state. Last year 487 cases of this disease and thirty-eight deaths were reported.

Dr. Pusey Commencement Speaker.—It has been announced that Dr. William Allen Pusey, Chicago, President of the American Medical Association, will give the commencement address at the state university in June.

NEW YORK

Quarterly Publication Withdrawn.—The New York State Department of Health has announced that the publication of its *Quarterly* ceased with the January issue. Hereafter contributions from members of the staff will appear as individual articles or collected papers.

Director Appointed.—The state department of health announces the appointment of Joseph V. De Porte, Ph.D., professor of mathematics and statistics, New York State College for Teachers, since 1916, as director of the Division of Vital Statistics to succeed the late Dr. Otto R. Eichel.

Personal.—Dr. Theobald Smith, director, department of animal pathology, Rockefeller Institute, New York, recently spoke at Cornell University on "The Purpose of Research."——Dr. Stephen A. Douglass, Olean, has been appointed director of the Cattaraugus County Demonstration, and also county health officer, according to an announcement made by the committee on tuberculosis and public health, State Charities Aid Association.

American Stomatological Society.—The last monthly meeting of the New York State branch of this society will be

April 14, at the Academy of Medicine, New York. Among others, Dr. George W. Mackenzie, Philadelphia, will speak on "Stomatology and Its Significance to General Medicine"; Harold De W. Cross, D.D.S., Boston, on "Stomatology and Preventive Dentistry," and Alfred J. Asgis, D.D.S., New York, on "The American Stomatological Movement in International Activities."

Staff Changed at Veterans' Hospital.—The 450 veterans of the World War quartered at the tuberculosis hospital at Saranac passed, March 1, from the care of local specialists to a staff of six physicians to be attached to the local bureau and rated as "tuberculosis specialists." The change is regarded as the final step to place the Saranac Lake Bureau on a permanent basis as a hospitalization center. Veterans will be quartered as at present in government contract nursing and boarding cottages or, in the cases of married men, in annexes.

Legislative Matters.—The *New York State Journal of Medicine* notes that the number of bills introduced in the present legislature affecting the medical profession is larger than usual and that many of them are inspired by welfare organizations which do not seem to recognize the part which practicing physicians must take in the application of the proposed laws. These laws are often drawn without reference to the family physician. The only course open to the state medical society under the present conditions, it is stated, is to oppose this kind of legislation.

Report on Poliomyelitis.—According to the state health department, the number of cases of poliomyelitis reported in this state in 1924 was larger than for any year since 1916, the number being 866, of which ninety-one terminated fatally (10.5 per cent.). The largest number of cases occurred in Syracuse and the counties adjacent, yet nearly every county reported some cases. During the year, eighty-seven orthopedic clinics were held with a total attendance of 1,795 patients. The total number of cases under state supervision on Jan. 1, 1925, was 2,187. Of these 1,650 had their onset in 1916, and 537 previous to that time.

New Fourth of July Menace.—The *Industrial Hygiene Bulletin*, published by the New York State Department of Labor, calls attention to recent reports of deaths of children from such so-called harmless fireworks as "son-of-a-gun" and "street devil." This type of fireworks contains white or yellow phosphorus. The safe and sane "fourth" campaign curtailed the manufacture of certain types of fireworks, thereby reducing the hazard due to mercury and chrome poisoning in fireworks factories. The appearance of the "street devil" adds a new hazard, for the makers of this product work with phosphorus.

New York City

Research in Colloid Chemistry.—New York University has issued a prospectus describing a proposition for the establishment of a national institute for research in colloid chemistry. Definite plans for the project are outlined, and the need for such an institution is emphasized.

Dr. Kolle to Lecture.—*New York Medical Week* notes that it has been announced from abroad that Dr. W. Kolle, professor of internal medicine, University of Frankfort, and director of the Institute of Experimental Therapy, will deliver the next Herter lectures and will participate in the Harvey Society series in New York.

Dr. Blake to Head Hospital.—The chairman of the executive committee of the board of managers of the Tarrytown Hospital, Tarrytown, announced, February 28, that Dr. Joseph A. Blake will take charge of the Tarrytown Hospital, October 1. Dr. Blake will continue his office in New York for the present, but after October 1, will be permanently located in Tarrytown.

Biggs Memorial Lecture.—Mrs. Hermann Biggs has donated to the New York Tuberculosis Association an annual lecture on tuberculosis as a memorial to her husband, the late Dr. Hermann M. Biggs. Each year an eminent physician will be brought to New York to give an address. The New York Tuberculosis Association has transferred the execution of the project to the Medical Society of the County of New York.

Dr. Prince Resigns.—Walter F. Prince, Ph.D., for many years research officer, secretary and editor of publications of the American Society for Psychical Research, has resigned and will be succeeded by J. Malcolm Bird, until recently editor of the *Scientific American*. In a recent investigation by a committee of the genuineness of the alleged medium "Margery" of Boston, Dr. Prince held, it is reported, that her genuineness had not been proved. Mr. Bird considers, it is reported, that "Margery is absolutely genuine."

Memorial to Dr. McCosh.—A committee was formed sixteen years ago on the death of Dr. Andrew J. McCosh to establish a memorial in connection with the Presbyterian Hospital, but the project has been delayed. The sum originally collected among Dr. McCosh's friends was $109,338; this fund now amounts to $193,000. Of this amount, $100,000 will be used to establish the Andrew J. McCosh operating amphitheater at the new medical center at Broadway and One Hundred and Sixty-Eighth Street. The remainder of the fund will be used to establish the Andrew McCosh Memorial Fund, the income from which will be used to further medical knowledge, under the direction of the board of managers of the Presbyterian Hospital.

National Committee for Mental Hygiene.—Fellowships have been granted by the National Committee for Mental Hygiene to Dr. Paul J. Ewerhardt and Dr. Philip J. Trentzsch for training in extramural psychiatry. Both physicians have been assigned for the present to the Boston Psychopathic Hospital, for study under Dr. Charles Macfie Campbell.——The New York State Committee on Mental Hygiene has recently issued a pamphlet entitled "First Aid for the Mentally Sick." It is a plea for the proper care of patients awaiting admission to a hospital for mental diseases. The New York insanity law states that "no insane person shall be committed as a disorderly person to any prison, jail or lock-up for criminals." But this law is constantly violated.

Academy Resumes Publication of Bulletin.—The New York Academy of Medicine resumed the publication of a bulletin, beginning with the March issue. In May, 1850, the academy provided for the publication of a bulletin, but after four volumes appeared publication was discontinued. Since then the publication of a bulletin has been undertaken several times and each time abandoned. Publication was last discontinued in 1901. The academy now needs a medium of expression. The committee on publication consists of Drs. Charles L. Dana, chairman, Fenwick Beekman, Samuel A. Brown, Charles A. Elsberg, Edward Livingston Hunt, Albert R. Lamb, Frederic E. Sondern and George B. Wallace. The bulletin will contain lectures, discussions and papers, official reports, recommendations and announcements. The first issue contains a record of the meeting of January 15, and the papers read at the Dec. 4, 1924, meeting.

NORTH CAROLINA

Children in North Carolina Jails.—According to the state board of charities and public welfare, there are 138 children under 16 years of age in jails in North Carolina. Forty-nine are white boys, eighteen white girls, sixty, negro boys and eleven negro girls. There were also 1,765 persons between 16 and 21 years of age in jail; 782 white boys, 612 negro boys, 186 white girls and 185 negro girls. These reports were based on data received from 546 jails.

Dr. Rankin May Resign.—It is reported that Dr. Watson S. Rankin, state health officer since 1909, will shortly tender his resignation to the state board of health and accept service with the Duke Foundation as one of fifteen members of the Duke commission charged with the custody and administration of the foundation fund and distribution of the income therefrom. Dr. Rankin, it is stated, is to be especially concerned with the funds used for hospital aid (32 per cent.) and for the helping of orphanages (10 per cent.) in the Carolinas.

Legislative Matters.—The senate has passed a bill requiring the administration of antirabies vaccine to all dogs in the state.——A bill to exempt private hospitals from taxation was defeated in the senate by a vote of 4 to 37.——A recent enactment provides that the state board of welfare will continue to receive reports from orphanages in the state, which have invested assets in excess of $60,000, but will exercise no control over, nor issue licenses to them. This was a compromise between the state welfare officer and representatives of large fraternal society orphanages which objected to exactions of the welfare board.

Twenty-Seven Arrested.—Federal authorities have, within the last few days, arrested twenty-seven citizens of Mecklenburg and Gaston counties charged with violating the Harrison Narcotic Law. Dr. Frank V. Taylor, Stanley, is reported as being the chief offender and his bond was fixed at $20,000.

A. V. Boyles, a dentist of Dallas, is among those arrested; also his brother, Dr. Memory F. Boyles, a physician of Dallas, who is at present taking postgraduate work in New York. Charlotte is believed to be headquarters from which operations have been conducted by various selling agents. M. F. Rhees, U. S. agent, Washington, D. C., has been working on these cases.

OHIO

Chiropractic Bill Killed.—The chiropractic bill, which would establish a board for the regulation and licensing of chiropractors in Ohio, was killed by the house rules committee, February 26.

Five Chiropractors Arrested.—C. E. Moran, Rockford; Dulan Baker, Chattanooga; Mrs. E. Culver, and Geroux and Geroux, Celina, chiropractors, were recently arrested for practicing medicine without a license, and pleading not guilty, were released under $300 bond.

Physician Sentenced.—The supreme court, February 17, sustained the conviction of Dr. Charles S. Emery, Toledo, in the Lucas County courts on a charge of performing an illegal operation, Jan. 1, 1924. Dr. Emery was sentenced to a minimum of three years in the penitentiary, it is reported.

Society News.—Dr. Albert A. Berg, New York, addressed the Marion County Medical Society, March 3, on "Why Operations for Gastric Ulcer Are Not Successful."——At the general meeting of the Academy of Medicine of Toledo and Lucas County, March 6, Dr. George Paul Hohly spoke on "The Sympathetic Nervous System." A motion picture film of gastric motility, prepared by Dr. Lewis G. Cole, New York, was exhibited.

Special Legislation to License One Osteopath.—A bill, which had previously passed the house, passed the senate, February 24, giving an osteopath in Tuscarawas County who has been unable to obtain a license from the state board of medical examiners, the right to practice medicine and surgery in Ohio. This measure purports to be a general law, but it has prerequisites with which only the Tuscarawas County osteopath could comply. It was introduced by Representative Hines of New Philadelphia and sponsored in the senate by Senator Garver of Millersburg. Senators Waitt of Lakewood and Powell, Bowling Green, protested the bill, declaring it lowered the standards of medicine in Ohio.

Crile Research Fellowships.—The committee on medical fellowships at Western Reserve University Medical School, Cleveland, announced that two full-time research fellowships will be available for the academic year, 1925-1926. They are open to qualified persons who elect to do research work in any department of the medical school of Western Reserve. The period of service is not less than ten months. The allowance is $1,500 per annum, and promising fellows may be reappointed for a second year at $2,000 per annum. Applications should be addressed to the committee on medical fellowships, Western Reserve University, 2109-15 Adelbert Road, Cleveland, with a brief statement as to past academic work, degrees, previous research training and the nature of the work contemplated.

Dr. Boudreau Goes to League of Nations.—After nearly fourteen years with the Ohio Department of Health, Dr. Frank G. Boudreau, chief, division of communicable diseases, has accepted the position of statistician-epidemiologist with the health section of the League of Nations, Geneva, Switzerland, and will sail this month. Dr. Boudreau was graduated from McGill University Faculty of Medicine, Montreal, in 1910, and, in 1911 was appointed to the state board of health. During the World War, he was commissioned in the medical department, U. S. Army, serving with the British army in England, France and Belgium. Lieut.-Col. Chandler P. Robbins, M. C., U. S. Army, retired, who has been chief of the bureau of venereal diseases for more than two years, has been assigned as acting chief to succeed Dr. Boudreau.

Hospital News.—The annual report of the Massillon State Hospital, Massillon, shows that this institution is caring for 554 more patients than is considered its capacity, which is given at 1,550.——At the annual meeting of the Providence Hospital, Sandusky, Dr. Henry W. Lehrer was elected president to succeed Dr. James D. Parker.——Dr. Edward G. Reinert, Columbus, was elected president of the board of trustees of the Radium Hospital recently.——The capacity of the Ohio Hospital for Epileptics, Gallipolis, has been increased from 1,700 to 2,000 through the completion of two new cottages and a hospital building. The additional space has already been filled, as the waiting list for admissions exceeded the increased capacity.——The state has saved over $5,000,000, says the *Ohio State Medical Journal*, in the cost of supporting patients at its institutions for the insane since the pay patient law became effective in 1910. Receipts from patients able to pay, during 1924, amounted to about $750,000.

OKLAHOMA

Bill to Create State Board of Health.—A bill has been introduced in the senate to amend the compiled statutes so as to create a state board of health and provide for a state health commissioner. The board would comprise two physicians licensed to practice medicine in Oklahoma and in good standing with the medical profession, one dentist in good standing with the dental profession, one sanitary civil engineer and one citizen of the state who is not a member of the preceding professions. Appointments subsequent to the original appointments would be for a term of six years, and the governor would, so far as is practicable, select persons recommended by the state medical association, the state dental society, the Oklahoma Section of the American Society of Civil Engineers and the Oklahoma Public Health Association. Members of the board would serve without pay, and the secretary, who is not to be selected from the members of the board would be the state commissioner of health. The state board of health would have power to make, and the commissioner power to enforce, any needful rule for the prevention and cure of disease, and for the prevention of the spread of any communicable disease. They would have the power to establish quarantines; isolate any person having a communicable disease; destroy any impure or diseased articles of food that might be for sale; superintend the several boards of health in the counties, cities, towns and townships; establish rules for keeping vital statistics, and perform such other duties as may be prescribed by the law.

OREGON

Personal.—Dr. Alfred L. Richardson has been appointed health officer of La Grande, to succeed Dr. Edwin G. Kirby. ——Dr. Jacob E. Shearer, Tillamook, has been appointed county health officer for Tillamook County to succeed Dr. Robert T. Boals, who has held that position for many years. ——Dr. Lance E. Briscoe has resigned as head of the Clackamas County health unit to become medical officer in charge of the U. S. Veterans' Bureau, Portland, and Dr. Frank W. Wallace, Oregon City, has been appointed county health officer to succeed Dr. Briscoe.

PENNSYLVANIA

Personal.—Dr. Ray Lyman Wilbur, president of Stanford University of California and former president of the American Medical Association, was orator at the "University Day" exercises at the University of Pennsylvania, February 23.

Leper Sent to Carville.—A woman in Reading, suffering from leprosy, was taken to the government leprosarium at Carville, La., February 27, under instructions from the Surgeon General, U. S. Public Health Service. The patient came from Greece about ten years ago and has been under treatment for about two years.

Legislative Matters.—A county tuberculosis hospital bill has been introduced into the state legislature to take the place of the law of 1921, which was recently declared unconstitutional; also a bill providing for the establishment of a state hospital for the care of children who have nonpulmonary tuberculosis; also a bill, introduced at the request of the department of health, which would enable counties to employ full-time health officers and a nursing service. The department of health has also had a bill introduced which would authorize the formation of public county health associations and the payment of expenses of delegates attending their meetings and those of the recently organized state public health association. The three county hospitals, already in operation, are in an uncertain position regarding management, while in eleven other counties that have authorized the establishment of tuberculosis hospitals, work will not be started until the present legal obstacles are removed.

Philadelphia

Society News.—Drs. James A. Harrar, attending surgeon, Lying-In Hospital, New York, and John O. Polak, professor of gynecology and obstetrics, Long Island College Hospital, addressed the Philadelphia County Medical Society, March 11.

Personal.—Mayor Kendrick, members of his cabinet and officials in the department of public health, attended a reception recently in honor of the tenth anniversary of Dr. Joseph Chapman Doane, as medical director, Philadelphia General Hospital.

Drive on Quacks Renewed.—Dr. Wilmer Krusen, director of public health, announced, February 23, that a new campaign against illegal practitioners of medicine in the city will be started, in cooperation with the district attorney's office, new complaints having been received by the health department recently. A similar drive last year led to the arrest of many quacks and in driving others from the city.

Hospital News.—An oversubscription of about $6,000 was announced, March 3, by workers of the Northern Liberties Hospital campaign drive for $65,000.——Construction of a large six-story building as an addition to the Presbyterian Hospital in Philadelphia was forecast in the announcement, March 3, by Henry N. Paul, president of the institution, that preparations are already well under way for a $1,500,000 campaign which will begin in April. The new building will be devoted almost entirely to private and semiprivate rooms.

SOUTH CAROLINA

Society Reorganized.—The Aiken County Medical Society was reorganized at a meeting, February 23, at Aiken. Dr. Benjamin F. Wyman, Aiken, was elected president; Dr. Samuel A. Morrall, Graniteville, vice president, and Dr. Charles Hall Farmer, Aiken, secretary-treasurer. Dr. Drayton M. Crosson, Leesville, president, South Carolina Medical Association; Dr. Edgar A. Hines, Seneca, secretary of the state medical society; Dr. Carlos I. Green, Orangeburg, councilor for the Eighth District, and Dr. Washington P. Timmerman, Batesburg, past president of the state medical society, spoke at this meeting. The Aiken County Medical Society has been inactive for the last year.

PHILIPPINE ISLANDS

New Director of Health.—Dr. Jacobo Fajardo, Bacolor, has been appointed director of the Philippine Health Service. Dr. Fajardo was graduated from the University of Santo Tomas, in 1905. He has served as chief health officer in the health department of Mindanao and Sulu and as a member of the Philippine legislature.

Health Service Legislation.—The *Journal of the Philippine Islands Medical Association* notes that the Philippine legislature, which ended its session recently, enacted laws which provide retirement and pension for health service officers, punish by law the manufacturers of adulterated articles, and set aside one million pesos to aid in the construction and maintenance of provincial hospitals. The law now provides for the retirement of health officers, after twenty years or more of faithful service, and for an allowance for dependents in case of violent death or accident.

GENERAL

American Red Cross.—An accurate estimate of the results of the eighth annual roll call of the American Red Cross placed the membership for 1925 at 3,360,000, which is a gain in membership of about 237,000. The increase was general throughout the country with the exception of the old New England division, where there was an unexpected drop in roll call returns in some of the large industrial cities.

Prizes for Scientific Contributions.—The annual prize of the American Association for the Advancement of Science has been divided this year into two prizes of $500 each, and awarded to Lemmie R. Cleveland, D.P.H., Johns Hopkins School of Hygiene and Public Health, for work on the physiology of termites and their parasites, and to Edwin P. Hubble, Mount Wilson Solar Observatory, for work on nebulae.

American Board of Otolaryngology.—The first examination by this board will be held during the meeting of the American Medical Association, in Atlantic City, May 25-28. Thus far, more than 300 applications have been made. The rules of the board divide applicants into three classes, and the type of examination is different for each class: (1) those who have practiced otolaryngology ten years or more; (2) those who have practiced otolaryngology five years and less than ten; (3) those who have practiced otolaryngology less than five years.

Memorial to Dr. Jacques Loeb.—The *Journal of General Physiology* proposes to issue Volume VIII as a memorial to its founder, Dr. Jacques Loeb. The volume, which will contain papers by Dr. Loeb's pupils and his associates and a portrait and a sketch of his life, will appear simultaneously with Volumes VII and IX, and publication will commence about July 1. To be certain of obtaining a copy, subscribers should send in their subscriptions before that date to the *Journal of General Physiology*, Avenue A and Sixty-Sixth Street, New York. The price is $5.

Warning Against Unauthorized Solicitor.—Miss Josephine Gaston, who usually travels as a nurse, and who at one time represented the American Medical Association, is no longer in our employ. We understand that she is at present accepting subscriptions for *Hygeia* and collecting payments for THE JOURNAL in Cedar Rapids, Iowa, and vicinity, without our authority. The American Medical Association has no one in its employ whose name is "Josephine Gaston." Nor does it have any subscription solicitor who is not provided with credentials signed by the Secretary and General Manager of the Association and bearing an impression of its seal.

Dr. Lambert Appeals to Supreme Court.—The right of the government to restrict physicians in prescribing liquor for patients will be decided by the Supreme Court of the United States. An appeal has been docketed in the supreme court by Dr. Samuel W. Lambert, New York, in which case the decision of the U. S. circuit court, New York, sustained the provisions of the Volstead law in limiting liquor prescriptions. Dr. Lambert's contentions were upheld by the U. S. district court, but reversed on appeal to the circuit court. It is probable that the supreme court will not reach this case for decision in regular order for at least eight months.

American Child Health Association.—Courtenay Dinwiddie, general executive of this association, resigned, January 1, to devote his time to the Commonwealth Fund child health demonstration program.——The *Child Health Magazine*, published by the American Child Health Association, was discontinued with the January issue, after twelve months' service. The association announced that the *Child Health Magazine* will be replaced by a bulletin containing information on special subjects, which will be published from time to time and will be the basis of press releases, thus enabling the association to increase its distribution of information on child health.

Large Single Copper Crystals.—The General Electric Company, Schenectady, N. Y., has produced bars of copper that can be bent double with very little energy but that require considerable strength to straighten them again. These bars are single crystals of pure copper, some 6 inches long and seven-eighths inch in diameter, and are much larger than any previously recorded. These crystals have been subjected to many kinds of tests which revealed unexpected facts concerning properties of metals. When molten metal is cooled, the resultant mass is composed of very small crystals, but if the metal is cooled slowly, the crystals are larger. The research laboratory of the General Electric Company succeeded in cooling copper so slowly that only one crystal was produced.

Negro Health Week.—The observance of Negro Health Week this year, April 5-11, will be the eleventh which has been held on a national scale. The program will emphasize hygiene and sanitation, each day being given over to a different aspect of the health problem. Sunday will be sermon and lecture day; Monday, hygiene day; Tuesday, swat-the-fly day; Wednesday, tuberculosis day; Thursday, children's health day; Friday, church sanitation day, and Saturday, general clean-up day. The program will be conducted under the direction of the Annual Tuskegee Negro Conference and the National Negro Business League, in cooperation with the U. S. Public Health Service, state, county and city health departments, and other organizations. An outline of the ground to be covered during the week has been published in pamphlet form by the division of venereal diseases, U. S. Public Health Service, and will be distributed to interested health organizations.

Meeting of Near East Relief.—At the annual meeting of Near East Relief, Washington, February 26, James L. Barton, Boston, was elected chairman; John H. Finley, New York, vice chairman; Charles V. Vickery, Montclair, N. J., secretary, and Cleveland H. Dodge, New York, treasurer. An anonymous gift of $175,000 was announced at the meeting, to assist in meeting the million dollar deficit incurred in relief work after the Smyrna disaster. Oliver J. Sands, Richmond, Va., pledged, for the state of Virginia, $200,000 a year for the support of 3,000 children in the American

orphanage at Syra, Greece. During the last year, it is reported, Near East Relief maintained forty-six orphanages, sixty-five hospitals and twenty-three other institutions, and its program reached more than a half million persons. The treasurer reported receipts for 1924 of $4,265,322, and disbursements of $3,966,329; the balance, $298,993, together with other funds reaching $45,957, was set aside to reduce the Smyrna deficit. Mr. Henry Morgenthau said: "It is a great misfortune that the impression should prevail in this country that the need for helping these people has ceased. The emergency created by the expulsion of the Greeks from Turkey still exists."

Association of American Medical Colleges.—At the thirty-fifth annual meeting of the association, Boston, March 5-7, the following officers were elected: Drs. Hugh Cabot, Ann Arbor, president; David L. Edsall, Boston, vice president; Fred C. Zapffe, 3431 Lexington Street, Chicago, secretary (reelected); members of the executive council: Irving S. Cutter, Omaha; Walter L. Niles, New York, and Charles F. Martin, Montreal. The next meeting will be in Charleston, S. C., Oct. 26-28, 1925. The association adopted as the requirements for admission to medical schools and medical colleges a minimum of sixty semester hours of work, which shall include eight semester hours of general chemistry, with a minimum of four semester hours of laboratory work; four semester hours of organic chemistry; eight semester hours of physics, with two of laboratory work; eight of biology, with four of laboratory work, and six of English literature and composition. Provision is also made for admission to medical schools and medical colleges on the basis of examinations, which shall be conducted by such agencies as may be designated by the executive council of this association. An amendment was adopted whereby any graduate school in medicine, a part of a university, any graduate division of a university offering medical instruction or any school offering courses in medicine to general practitioners but not leading to any degree, is eligible to graduate membership in the association on conforming to certain requirements.

CANADA

University News.—The Faculty of Medicine of McGill University, Montreal, announces four postgraduate courses, each of four weeks' duration, commencing on April 6, covering general medicine, general surgery, gynecology and the specialties.——The University of Manitoba has received a gift of $2,000 from a group of local business men to be devoted to research and clinical work.

Personal.—The Montreal Health and Tuberculosis League has secured as director Dr. Grant Fleming, M.C., D.P.H., who, for the last ten years, has been associated with Dr. Charles J. C. O. Hastings, chief medical health officer for the city of Toronto.——Dr. Harry K. Groff has been appointed by the Workmen's Compensation Board of the Province of Alberta to travel throughout the province, visiting compensation cases, and consulting with the physicians in charge. ——Dr. Walter Bapty has been elected president of the Medical Society of Victoria, B. C., and Dr. John H. Moore the secretary-treasurer.

Society News.—The forty-eighth branch of the Ontario Medical Association, known as the Porcupine District Medical Society, has been organized in the mining district of Northern Ontario, with Timmins as its center. Dr. Herman H. Moore, Timmins, is the first president and Dr. Samuel R. Harrison, Timmins, the secretary.——The Alberta Medical Association, by resolution, views with apprehension and disfavor contract practice that in any way interferes with the rights and privileges of other practitioners. In the matter of fee splitting, the association pronounces that this practice is not only unethical, but probably illegal, being the acceptance of a secret commission.

FOREIGN

International Congress on Accidents and Occupational Affections.—The secretary of this congress, which is to convene at Amsterdam, Sept. 7-12, 1925, is Dr. Brocx, 55 Pieter de Hooghstraat, Amsterdam. National committees are being organized in different countries.

Fellowships for British Students.—The Commonwealth Fund of New York has announced, according to *Science*, the establishment of twenty annual fellowships for British students at American universities, similar to the Rhodes scholarships for American students.

Personal.—Professor Mangiagalli of Milan is establishing a national cancer research institute. The land for it has been donated, and the city has appropriated a million liras for it.——Dr. Diepgen, Freiburg, has been elected a fellow of the Hungarian Medical Association, in tribute to his work as a historian of medicine.——Professor Aldershoff and Professor Nolen, Amsterdam and Utrecht, presided at a recent representative meeting to discuss the introduction of "Sanocrysin" into the Netherlands. The verdict was that the remedy is still in the tentative stage and is dangerous and at most should be used only in well equipped clinics. In Germany, Czerny, Friedemann, Kraus and Neufeld form the committee to supply the country with "Sanocrysin."——Professor Spolverini has been elected to the newly founded chair of hygiene and clinic for young infants at Milan. The chairs of general hygiene, pediatrics and eugenics, with this new chair, form the group especially designed for improvement of the race.——The Spanish *Archivos de Pediatría* states that Prof. Rudolph Matas, New Orleans, has offered a prize of $100 for the best work on the mineral springs of the province of Gerona or a medical study of the province.——Professor Jacobæus, Stockholm, has been invited to demonstrate his method of thoracoscopy in the Paris medical school and hospitals.

Deaths in Other Countries

Dr. **M. Zeissl,** professor of dermatology and syphilis, Vienna, author of a popular textbook, aged 71.——Dr. **C. Párraga y Acuña,** professor emeritus of legal medicine at Cadiz.——Dr. **Adolf Elzholz,** privatdozent of neurology and psychiatry at Vienna, discoverer of the Elzholz bodies, aged 62.——Dr. **Arthur Heffter,** professor of pharmacology, Berlin, and rector of the university, formerly of Bern, aged 65.——Dr. **G. Ledderhose,** emeritus professor of surgery, Munich, author of numerous works on surgery, aged 69.——Dr. **G. Nicolich,** Trieste, the surgeon who popularized iodin in the treatment of wounds.

Government Services

Reporting of Venereal Disease

During the year ending June 30, 1924, 363,063 cases of venereal disease were reported to the various state boards of health from all sources, according to figures made public in the annual report of the division of venereal diseases of the U. S. Public Health Service. The report indicates that this is an increase above the year 1923 of 27,382 cases, or 7.2 per cent. The total figures are composed of 193,844 cases of syphilis, 160,790 cases of gonorrhea and 8,429 cases of chancroid. It is pointed out that the large increase over the year 1923 does not necessarily mean that venereal disease was more prevalent in the United States last year than in the year before. For it is explained that the large number of cases now on record may be accounted for by the increased efficiency in detecting these maladies and by more conscientious reporting of cases on the part of physicians. For a long time the danger from syphilis and gonorrhea was greatly increased by the fact that these diseases were carefully concealed and were often kept secret even from physicians who might have brought about a cure. Diseased persons now are learning that they must go to a reputable physician or clinic if they wish to be cured, and laws requiring that these cases be reported to the state boards of health are making it possible to obtain more accurate reports on these diseases.

During the fiscal year 1924, public clinics to the number of 504 reported to the state boards. These clinics treated 118,023 cases of venereal disease, made up of 65,046 cases of syphilis, 49,029 cases of gonorrhea, and 3,949 cases of chancroid. These clinics made 302,152 Wassermann tests for syphilis and 203,008 examinations to discover gonorrhea. From these large figures it is asserted that people are better informed regarding the baneful consequences of these diseases than heretofore and are willing to take advantage of reputable opportunities for cure. Reports from thirty-seven correctional and penal institutions were received by the U. S. Public Health Service. The efforts of those in charge of these institutions have resulted in a large increase in the number of venereally diseased persons discovered and treated. New patients to the number of 7,043 were admitted to treatment in 1924. This is an increase of 44 per cent. over the number in 1923.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Feb. 24, 1925.

Sir Clifford Allbutt

The sudden death, at the age of 88, of the Right Hon. Sir Clifford Allbutt, P.C., K.C.B., F.R.S., regius professor of physic in the University of Cambridge, removes the leader of the medical profession in this country and one whose position was unique in the medical world. Great physician, great scholar, great teacher and great writer, he can be compared in his own generation only with Osler; but in his finished literary style he surpassed the latter, as he did every one else. In an address delivered at the recent coming of age of the University of Leeds, Sir Berkeley Moynihan—himself remarkable for his mastery of English—paid this apt tribute: "Sir Clifford Allbutt, the most deeply learned physician of this day, master of a style of English which for sheer beauty and majesty is perhaps unmatched by that of any other scientific author of our generation; an orator whose speech makes time seem hasty; a cultured upright English gentleman, is the pride of the school he served so long and well."

The son of a Suffolk clergyman, he was born at Dewsbury in Yorkshire. In 1856 he entered Gonville and Caius College, Cambridge, gaining a classical scholarship, and he graduated from there in the first class of the natural science tripos. He studied medicine at St. George's Hospital, London, and subsequently in Paris. He graduated with the degree of M.B. at Cambridge in 1861, M.A. in 1867 and M.D. in 1869. In 1864 he was appointed assistant physician to the Leeds General Infirmary, and two years later lecturer in anatomy. His first important work was the introduction of the clinical thermometer into general use. The first clinical thermometers were too cumbrous for general practice. He devised a new form to be carried in a portable case. Next came his pioneer work in establishing the value of the ophthalmoscope in medical diagnosis. His views on this subject were embodied in a book entitled "The Use of the Ophthalmoscope in Diseases of the Nervous System and of the Kidneys and also in Certain General Disorders," which he dedicated to Hughlings Jackson, from whom he had received his first ideas of the probable value of the instrument in the diagnosis of cerebral disease. This epoch making work was published in 1871. In the same year he read an important paper before the Royal Society on the "Effect of Exercise on the Bodily Temperature." In 1880, for his original work in clinical medicine, the society bestowed on him the highest scientific honor of this country—the F.R.S. In 1884 he delivered before the Royal College of Physicians the Goulstonian Lectures on the Neuroses of the Viscera—an important contribution to a subject that was only beginning to be understood. He published many other valuable papers, one in conjunction with his surgical colleague, Mr. Pridgin Teale, on the "Treatment of Scrofulous Neck," in which operation was recommeded instead of the older expectant treatment. In 1892 he was appointed regius professor of medicine in the University of Cambridge. In 1896 appeared the first volume of his great "System of Medicine," which was written by many authors and for years was the most authoritative work in the language. He contributed many of the articles himself—on grain and mushroom poisoning, opium and other intoxications, mountain sickness, chlorosis, neuroses of the stomach, dilatation of the stomach, scrofula, functional disease of the heart, overstress of the heart, diseases of the aortic area of the heart, adiposis dolorosa, senile paraplegia, and neurasthenia. In 1905 a second edition was published in collaboration with Dr. Rolleston. Disorders of the circulation particularly attracted his attention. He pointed out that blood pressure tends to rise in men who have laid aside athletic habits and continue to indulge in abundance of food. He introduced the term "senile plethora" or "hyperpiesia" to describe the rise of blood pressure that occurs in otherwise healthy persons after middle life.

In 1915 appeared his great work on "Diseases of the Arteries and Angina Pectoris." His theory that angina pectoris is due to disease of the root of the aorta was not received with much favor at first, but it has steadily gained adherents. His scholarship and great knowledge of medical history are shown in such works as "Science and Medieval Thought" (1901), "The Historical Relations of Medicine and Surgery to the End of the Sixteenth Century" (1905), and "Lectures on Greek Medicine in Rome" (1921). As regius professor he had to read many theses, and while he found the matter good he was vexed by the prevailing defect of writing, which he described as "not mere inelegance" but "such as to perplex and even travesty or hide the author's meaning." He therefore wrote his classical "Notes on the Composition of Scientific Papers," which every one who would write a medical or scientific article should read and assimilate. All the faults such writers are prone to commit are carefully exposed. Indeed, the book is striking evidence of his zeal in education. Here a master of the most elegant English descended to the task of teaching ordinary students how to write. He strongly held that good diction and literary style were as desirable in science as in literature. Another subject very near his heart was comparative pathology, of which he deplored the neglect. As a result of his appeals, an institute devoted to this subject was recently established at Cambridge. When a section of comparative pathology was recently formed at the Royal Society of Medicine, he was most appropriately made its first president. Except for deafness, age seemed not to affect his faculties; his subtle intellect was keen to the end of his long life. In the number of the *Lancet* containing his obituary is a letter from him on "Alkalis in Certain Diseases of the Skin," evoked by a recent article in that journal. Only a few weeks ago he joined in the *Times* in the renewed crusade against white bread. Though a keen critic of any doctrine brought forward, he was in his personal relations one of the kindliest of men, without a trace of that arrogance which success engenders in lesser minds. His courtesy was unfailing to all, high and low, and, like his other qualities, a finished product.

A Memorial to Mackenzie

When Sir James Mackenzie originated the St. Andrews Institute for Clinical Research, he expressed the hope that it would become permanent and serve as a center for the promotion of his ideas regarding the future development of medicine. After five years of strenuous endeavor, the institute has suffered a severe loss through his death, but his work is being continued and no effort is being spared to give effect to the aims he had in view. The institute is now well organized, and the scheme, which has had a profound influence on medical thought and practice in this country, in America and on the continent, has reached a stage at which important practical results are being obtained. Through the efforts of Sir James Mackenzie, the building, together with well equipped chemical and bacteriologic laboratories, is the property of the council, but the performance of the scheme can be assured only when funds have been accumulated sufficient to meet annual expenditure. Heretofore, the expenses have been met by contributions from Sir James Mackenzie and from his personal friends, while grants for special purposes have been made by the Carnegie Trust and the Medical Research Council.

The council of the institute now finds a wider appeal necessary, if Mackenzie's hopes are to be realized and the fruits of his genius are to be preserved. It suggests that there could be no more fitting tribute to his life and work than the placing of his own institute on a sound financial basis. With this object, the council has resolved to associate the name of the founder with the institute, which will henceforth be known as the James Mackenzie Institute for Clinical Research, St. Andrew's, and to issue an urgent appeal for funds. It has been ascertained that a sum of about $300,000 will be required to produce the minimum income necessary for the scheme, and of this amount $35,000 has already been collected. Donations toward securing the establishment of the institute as a permanent memorial of its founder will be received and acknowledged by the honorary treasurer, Commercial Bank, St. Andrews, Fife, Scotland.

International Congress of Radiology

The Electro-Therapeutic Section of the Royal Society of Medicine, the Roentgen Society and the British Institute of Radiology have made arrangements for a Congress of Radiology in London, July 1-4. Radiologists from all countries are invited. It is hoped to form a comprehensive international committee and establish a full international congress at regular intervals, meeting in different countries. All papers to be read should be sent to the secretary-general at the British Institute of Radiology, 32 Welbeck Street, London, W., not later than May 1, accompanied by a short abstract. It is important that, whenever possible, papers should be approved by a recognized society of which the author is a member. There will be an exhibition of radiologic and electrical apparatus and of roentgenograms. Radiologic and electrotherapeutic societies are invited to send representatives who shall be eligible to serve on the international committee. The fee for membership in the congress is $10.

The Cancer Campaign

Sir John Bland-Sutton, president of the Royal College of Surgeons, presided at the quarterly meeting of the Grand Council of the British Empire Cancer Campaign. It was reported that, through the courtesy of the British Advisory Board on Medical Missions of the Conference of Missionary Societies, a world-wide questionnaire on the incidence of cancer was being circulated to 1,100 medical missionaries throughout the world. The questionnaire had been prepared by the intelligence committee, with the assistance of Dr. Major Greenwood, statistical officer to the ministry of health. It was hoped that valuable data might thereby be obtained concerning the incidence of cancer at many outposts of civilization throughout the world. The council confirmed the final arrangements for the administration of the radium recently bought by the campaign and for all matters dealing with radiology as applied to cancer. This will include the control of the central radium emanation depot, now being set up with the financial aid of the campaign at the Middlesex Hospital, and the radium allocated for research at St. Bartholomew's Hospital, St. Peter's Hospital for Urinary Diseases, and the Cancer Research Committee of the London Association of the Medical Women's Federation. In furtherance of the objects of the campaign to keep in the closest touch with cancer research work in different parts of the world, Dr. Duncan Graham of Toronto and Dr. James Ewing of New York were invited to become the campaign's representatives and correspondents in Canada and the United States.

Edward Emanuel Klein

Edward Emanuel Klein, F.R.S., the pioneer of histology and a bacteriologist, has died at Hove in his eighty-first year. Born at Ersec and educated in Vienna, he early showed an aptitude for histology. When only 24, he attained the position of professor and had published an important work on the muscles of the esophagus. In 1871, the founder of our system of public health in this country, Sir John Simon, then principal medical officer of the local government board, asked Klein to carry out some bacteriologic investigations. This led to a permanent appointment. He carried out for the board a series of valuable researches into the infective processes of the principal infectious diseases, and greatly extended the knowledge of them. The life of pathogenic microbes in water, diphtheria prophylaxis, oyster culture and disease, epidemic diarrhea, typhoid, smallpox and cholera were among the subjects on which his researches threw much light. Soon after coming to this country, he was appointed assistant lecturer on anatomy and physiology at St. Bartholomew's Hospital Medical School, and later became director of the bacteriologic department. In 1873 he was appointed associate editor of the *Quarterly Journal of Microscopic Science*. In 1879 appeared his "Atlas of Histology," which became a standard textbook. His "Introduction to the Study of Specific Micro-Organisms" was published five years later, and his "Elements of Histology," which followed, achieved a similar position.

PARIS

(From Our Regular Correspondent)

Feb. 24, 1925.

The Control of Private Laboratories

The number of private laboratories is increasing daily. Laboratory tests have become such a necessary part of modern medical practice that physicians would not know how to get along without them, and will never complain that too many private laboratories are being placed at their disposal. Nevertheless, they are entitled to demand that the results furnished by these laboratories shall be accurate. In a communication recently presented to the Academy of Medicine, M. C. Regaud proposes the adoption of an official diploma to be granted, on examination, to the directors of laboratories, whereas at present there is no attempt at official control. M. Léon Bernard also has stated that the creation of such a special diploma would obviate, in a great measure, the dangers resulting from incompetence on the part of laboratory directors, but would not wholly prevent the disadvantages arising from a bad organization of the laboratories. He holds, therefore, that an effective system of inspection would be the best means of securing dependable laboratory findings.

After-Effects on the Respiratory Organs of Intoxications by War Gases

The sequels of intoxications by war gases were the subject of a recent interesting study by Prof. E. Sergent of the Ecole d'application du service de santé at Val-de-Grâce (Paris). Of the enduring changes in the organism brought about by war gases, the effects on the respiratory organs are the most frequent. They may constitute a state of chronic and incurable disease of the respiratory apparatus, which must be carefully distinguished from chronic tuberculosis. The sequels of toxic gases of the type of hydrocyanic acid, which are rapidly fatal, are nil, and the sequels of irritating gases are negligible. It is the gases of the vesicant type, for example, yperite (mustard gas), that most frequently produce permanent or lasting effects on the respiratory organs. This is due to the fact that these gases have been more widely used than the others. In reality, the suffocating gases (chlorin gases) are much more injurious. Instead of their action being confined to the bronchi, as is the case with the vesicating gases, they penetrate to the alveoli and have a still greater tendency to leave sequels. The pathogenesis of after-effects on the respiratory tract has not as yet been

elucidated through studies on the cadavers of gassed subjects. We must base our conclusions, therefore, on the experimental findings and the anatomicopathologic results secured through necropsies on subjects who had died from recent intoxications. In experiments with the suffocating gases on dogs, various investigators have induced experimental lesions of desquamative catarrhal bronchitis, atelectasis and also emphysema. With the vesicant gases, they induced ulcerative and pseudomembranous lesions of the bronchial mucosa and also lesions characterized by atelectasis and emphysema. Other authors have found later in animals lesions of bronchoalveolar sclerosis resembling the findings in man. These various lesions are counterparts of what is observed at necropsy in human subjects.

In victims of acute intoxication resulting from vesicant gases, Ménétrier and Coyon have described lesions of obliterating bronchiolitis and even bronchopneumonic nodules, which constitute the initial stage of future terminal bronchopulmonary sclerosis. The latter results through an inflammatory process, which develops by periodic attacks and has its origin in secondary infections of the upper air passages. These successive inflammatory attacks react on the mediastinal glands and produce lesions of adenomediastinitis, which may be diagnosed roentgenologically and are responsible for certain factors of the syndrome of respiratory sequels due to gas intoxication.

After reviewing the principal researches that have shed light on the question, Sergent expresses the view that it is not advisable to multiply the clinical types of bronchopulmonary sequels resulting from gas intoxications, as certain authors are inclined to do. These sequels may take on all the forms of recurring tracheobronchitis. The gravity of the manifestations and their progression are directly dependent on the extent and the depth of the lesions produced by the gas, and are indirectly affected by the intervention of individual and associated factors (age of the subject, previous condition of his respiratory apparatus, associated defects or diseases, condition of the rhinopharynx, and, finally, the hygienic conditions under which he lives). These bronchopulmonary manifestations may remain benign, although they persist, or they may become severe and progressively worse. The benign types are characterized by simple disorders such as occur in any tracheobronchitis, becoming worse if the subject takes a slight cold or inhales dust or smoke. The intervals between the paroxysmal crises are lessened; dyspnea develops and may take on a permanent form. The condition, as it becomes worse, assumes the character of dry catarrh (Laënnec), which with every relapse changes to considerable mucopurulent catarrh. The more severe forms sometimes follow the benign types, the paroxysmal attacks of which become worse as they are repeated, until a genuine condition of bronchopulmonary disease develops. Their anatomic substratum is constituted by congestive lesions, sometimes associated with hemoptysis, thus causing them to be confused with tuberculous lesions; foci of infectious edema; corticopleuritis of the bronchopneumonic foci, or even pulmonary abscesses with cavitation. Sometimes the evolution toward the severe type is not interspersed with acute attacks; it may be regularly progressive, pointing to the organization of a peribronchial sclerosis, more or less generalized, extending to the parenchyma of the lungs and often accompanied by dilatations of the bronchi. To the effects of this pulmonary sclerosis, a factor of atelectasis and emphysema, are added inflammatory complications, affecting the glands and the cellular tissue about them, and thus is developed chronic bronchitis with adenomediastinitis. The clinical picture is that of chronic bronchitis associated with emphysema: loud râles are heard throughout the chest; the cough resembles that of pertussis; the dyspnea is asthmatic; the right heart shows signs of fatigue, and asystole is threatening. Fine râles are distinguished in the bases; foci of pulmonary edema are present, and, since the patients are often feverish and cachectic, only a bacteriologic examination of the sputum will prevent confusion with fibrous tuberculosis.

The roentgenologic examination reveals the same aspect as in any pulmonary sclerosis with emphysema. The findings would be: enlargement and density of the shadows of the hilum, where certain sharply circumscribed and very dark opacities would denote the presence of engorged hilar glands which one would find again in an oblique position where they become merged with the diffuse gray tint of the clear open space. Many of the benign types have been cured since the war. Others have been arrested.

Another important question is the relation between intoxication by gas and tuberculous infection. Several observations of acute tuberculosis developing immediately following gas intoxication seem to point to the favoring action of intoxication in the sense of a reawakening of an inactive or latent tuberculosis, but in reality such is not the case, as experiments have frankly shown. The statistics published from all quarters are very conclusive and their results agree absolutely. The various authors report having found from 0.25 to 4 per cent. of gassed persons affected with tuberculosis. Sergent states that 4 per cent. is the highest percentage that can be accepted. The number of tuberculous persons among previously gassed subjects is, therefore, exceedingly low, and it is certain that previous gas intoxication had nothing to do with their tuberculous condition. The same conclusion was reached by Dr. A. Francine in America. In the exceptional cases in which an immediate reawakening of tuberculosis, rapidly resulting in death, has been observed following a gas intoxication, it is possible that a reinfection of the bronchial tree already profoundly damaged may have added its action to the violent attack on the organism and may be the explanation for the precipitation of acute tuberculosis. But in the cases in which one discovers tardy pulmonary tuberculosis in persons previously gassed, it is not admissible to incriminate the simple and direct action of the gas, and we are compelled to assume that conditions of a general and still unknown nature facilitated the appearance or the reawakening of tuberculous lesions, owing to the lessened resistance of the organism. The differential diagnosis of tardy tuberculosis and the grave sequels of gas intoxication is often difficult. All precautions should be taken in making such differentiation to avoid considering as tuberculous the patients who are not so. Furthermore, the grave sequels of gas intoxication constitute in themselves permanent and incurable disabilities which justify the application of the highest pension rates.

BELGIUM

(From Our Regular Correspondent)

Feb. 17, 1925.

The Radium Institute of the Red Cross

The Radium Institute of the Red Cross of Belgium, which was established for the treatment of indigent persons suffering from cancer and which was the first anticancer center to be created for the poorer classes, has recently ceased its activities. The various anticancer centers of the universities will continue this work, the initiation of which, immediately following the promulgation of the armistice, merits our admiration. In a communication to the Academy of Medicine, M. Bayet, who was the moving spirit of the anticancer campaign in Belgium, has given an account of the activities of the institute. The method of work was based on the collaboration of medical activities, and took into account

the division of labor and the utilization of competent authorities. Dr. Bayet called into being a complete group of approved specialists, each of whom was charged with the perfection of the technic in his particular branch. This group of physicians was placed under the direction of the director of the institute, and consisted of a roentgenologist (a therapeutist), a surgeon, a gynecologist, an otorhinolaryngologist, a urologist, a stomatologist, and the director of a laboratory. Also a photographer-draftsman was attached to the service. Dr. Bayet emphasized the value of such collaboration. It was through the cooperation of the various specialties and not through the exaltation of one over the other that the desired goal was reached. Any anticancer center that subordinates one specialty to another is doomed to complete failure; for example, the subordination of radium therapy to surgery, a method adopted in France and in some other countries. The Radium Institute thus organized was able to exercise a beneficent influence in a large number of cases. Generally speaking, the institute followed the principle of admitting and treating all the patients who presented themselves, no matter how advanced their condition was, on the basis that, with rare exceptions, it is always possible to do something for a cancerous person. This fact is of importance in making comparisons of results. The radium institutes at which the press of patients is so great that one is forced to make a choice will of course have more encouraging statistics than those to which all patients without distinction are admitted, but the former will not furnish so exact an idea of the influence of radium treatment on cancer of a given organ.

Within the two years, 952 cancer patients presented themselves at the institute for consultation. Of this number, 742 were subjected to treatment. The surgical department treated 181 patients, ninety-six for cancer of the breast, forty for cancer of the rectum and ten for cancer of the stomach. The gynecologic section treated 221 patients with affections of the genital organs, the greatest number of them having cancer of the uterus, most of the cases being inoperable. These inoperable cases constituted about four fifths of the total number treated, and one third of them were cases in which the cancer was "walled in" within the small pelvis. The otorhinolaryngologic section treated 170 patients with cancers of the buccal cavity and larynx. The dermatologic section admitted 144 cases. The urologic section treated nineteen patients, the stomatologic section six patients. The principle that in all cases dominated the technic employed was to reach the cancer by irradiations irrespective of the localization; that is, to apply "radium-surgery," or "surgery of access," so called, to all cancers no matter what the location. Radium emanations may be applied to any tumor, whether it is deeply located or simply difficult of access, and with the same accuracy of dosage as if it were a superficial cancer.

The Proper Testing of Applicants for a Chauffeur's License

A new law pertaining to the regulation of vehicle traffic and, more particularly, to the testing of applicants for an automobile driver's license, is about to be promulgated. At present, the granting of a chauffeur's license is based on a minimum of physical aptitudes which must be covered by a certificate of examination furnished by a physician. According to the terms of the law, the medical examination must take particularly into account these points: (1) the loss of vision in one eye; (2) the reduction of a unilateral vision beyond two thirds; (3) the loss or diminution of hearing, and (4) physical defects impairing the functioning of the locomotor apparatus or affecting the psychonervous equilibrium (particularly epilepsy). In case of paralysis or of affections impairing the functioning of the limbs, the nature of the lesions and the degree of impairment may need to be taken into account. Several learned societies have already protested against the inadequate character of the tests, particularly from the standpoint of vision. The present examination takes no account of the extent of the field of vision, which in reality constitutes the most important point in judging of an applicant's right to receive a chauffeur's license. On the other hand, some maimed persons who are supplied with well adjusted apparatus may be judged entitled to a license. Speaking before the Société des accidents de travail, M. Coppez likewise protested against the text of the law and urged the society to pass a resolution to send to the minister and the press, demanding a revision of the text of the certificate of aptitude, so called, the final editing of which should be entrusted to a group of competent physicians. The resolution was unanimously adopted by the members present.

Chromodiagnosis of Gastric Affections

Before the Société clinique des hôpitaux of Brussels, Dr. Destrée presented recently an interesting communication on a new method of testing gastric functioning. Researches on gastric acidity having proved a failure as a method of diagnosis, or having been very frequently proved erroneous, several investigators have been studying the elimination of certain dyes by the gastric mucosa after the subcutaneous or venous injection of a given dye. In this connection, the author showed that the elimination of neutral red by the gastric mucosa may serve for the diagnosis of gastric affections. The rapidity of elimination presents a parallelism with hydrochloric acid secretion, but the parallelism is not absolutely perfect. However, it appears that the curve of elimination of the colored substance agrees more closely with the clinical symptoms than does the curve of acidity. The author performs the research by fractional tests with the Einhorn tube, which is a simple technic. He gives the following figures on the rapidity of evacuation of the colored substance by the stomach, which, moreover, are for the most part in harmony with the degree of acidity: under twenty minutes in persons with hyperacidity; from twenty to thirty minutes in normal persons, and from thirty minutes to one hour in persons with hypo-acidity. Consequently, the elimination of neutral red by the gastric mucosa may be relied on to give useful and quick information, since it is always in direct relation with the clinical symptoms, whereas the acidity does not constitute a reliable test.

Radium Therapy and Surgery as Applied to Sarcomas

Before the Société belge de physiothérapie, Dr. Sluys presented an important communication recently on seventy-five cases of sarcoma, in which treatment by irradiations alone or combined with surgery were given. They were mainly lymphocytomas, or sarcomas of lymphoid tissues. Insertion of radium needles may be dangerous. It is desirable, above all, to encircle the tumor with irradiations, and the failures are almost always due to the fact that some gland is overlooked and receives no treatment. Roentgenotherapy and radium should be employed in applications that are neither superficial nor deep, but half way between. The irradiations should be extended over several days and should be allowed to penetrate at several points. Rough treatment is pernicious in the majority of cases. Metastatic tumors present, from the standpoint of sensitiveness to irradiations, the same character as the primary tumor. A certain proportion of the tumors are entirely resistant to irradiations. The other sarcomas are not, as a rule, so sensitive to irradiations, so that it is impossible to pursue any predetermined line of conduct. The treatment will depend on circumstances and on the results of the bioptic examination. In this field, irra-

diations do not appear to be superior to surgical treatment. The proportion of cures extending over any considerable length of time is not more than 45 per cent.

An Appointment

Dr. Brouha has been appointed in place of Professor Fraipont to take charge at the Faculté de médecine of Liége of the courses in theory of accouchements, obstetric operations, obstetric clinic and policlinic, and gynecologic clinic and policlinic. M. Brouha was the president of the last congress of French-speaking gynecologists and obstetricians.

RIO DE JANEIRO

(From Our Regular Correspondent)

Feb. 15, 1925.

Revival of the Heart

Dr. Floriano Bayma, surgeon of São Paulo, submitted to the Medical and Surgical Society a paper on the revival of the heart through the injection of epinephrin, pituitary extract and digitalis. His study was based on nine personal cases. Intrapericardiac injection started with J. Rehn's suggestion that drugs dissolved in water or oil are readily absorbed from the pericardial cavity. The myocardial injection has been condemned by Hesse, who believes that the drug cannot spread as quickly as if it were injected in the cavity itself. Intracardiac injections may be right intraventricular or left intraventricular. Dr. Bayma has found that injections in the right ventricle give as quick results as those in the left ventricle.

As to the best method, Dr. Bayma takes issue with Holweg's statement, "When the heart has stopped, the injection should be made in the muscle; when it still beats, in the cardiac cavity itself." The São Paulo surgeon thinks that one can easily puncture the desired zone and reach the lumen of the heart. In order to succeed, as soon as the resistance offered by the muscle to the penetration of the needle is felt, the insertion must be very careful, and aspiration begun at the same time with a small syringe. When the point of the needle has reached the cavity, there will be dark purple blood from the right heart and bright from the left.

As to technic, Dr. Bayma made a number of interesting trials: 1. Ruediger's method, a puncture from the second left intercostal space toward the sternum, to reach the right ventricle. Bayma's work did not confirm this, as three times the aorta was reached, once the pericardial sac distended by effusion, and twice the lung and the right ventricle. 2. Puncture through the third interspace. This technic is good, as Bayma, in six cadavers, reached precisely the interventricular septum. 3. Szubinski's technic, puncture through the fourth interspace. In six cases the right ventricle was invariably reached. 4. Marfan's technic. In two cases the needle perforated the stomach, which was greatly dilated. In three other cases, the heart was not reached, and in another it crossed the pericardial sac, which was very much distended, without reaching the heart. 5. Hesse's technic. The left ventricle was invariably reached with one exception, and in this case the operator made a puncture outside the nipple line. From his experience, Bayma concludes that the intracardiac injection is a very reliable process to revive the heart if used in time. While he succeeded in only one case out of eight, the other patients were already dying, some with myocarditis and others showed heart exhaustion because of the many stimulants already given. The method, however, entails some danger, and must be kept in reserve as a last resource.

Japanese Immigration

The National Academy of Medicine at several sessions has discussed Japanese immigration, considering the question from medical, social and patriotic points of view. The campaign was in charge of the president of the academy, Prof. Miguel Couto. Attention was given to the significance of this problem for Brazilian medicine. There has been a strong sentiment against all Asiatic immigration. The Academy of Medicine approved a motion addressed to the national congress, emphasizing that Asiatic natives cannot be assimilated, because of fundamental differences as to religion, tongue, character and habits. Approval was also extended to a pending amendment reducing the number of annual Asiatic immigrants to 5 per cent. of those already living in each state, and then only if they are farmers.

Chronic Pancreatitis

Dr. Oswino Penna, pathologist of the Oswaldo Cruz Institute, has made a careful study of the lesions in a case of chronic pancreatitis. The necropsy showed no findings in the stomach with relation to the pancreas. Special mention is made of the stomach, since in pathologic examinations made in the Oswaldo Cruz Institute, in three cases of tumor of the head of the pancreas, the disease proved really to be cancer of the stomach, with pancreatic metastasis especially in the pancreatic-duodenal glands. However, in the fat tissue of the omentum, near the head and the body of the pancreas, typical fat necrosis granules were found. The gross lesions of the pancreas were very discrete on the outside. On sectioning, there was a definite contrast between the appearance of the parenchyma of the head and that of the body, and especially the tail. In the head, the glandular arrangement was still preserved, but in the body and tail, the parenchyma was matted together. All lobular division had disappeared. This predominance of inflammatory lesions outside the head disagrees with Desjardins and Chauffard's observations. These authors located such lesions in the so-called "infected triangle."

BERLIN

(From Our Regular Correspondent)

Feb. 14, 1925.

The Physicians and the Health Insurance Societies

After a two days' session, the federal board for the adjudication of difficulties arising between physicians and health insurance societies has rendered a decision in the controversy between the Berlin leagues of health insurance societies and the physicians' merger (*Vertragsgemeinschaft*) of Greater Berlin. The decision is to the effect that for the formulation of a collective treaty between the leagues of health insurance societies, on the one hand, and the physicians, on the other hand, the acceptance of the treaty by the physicians' merger of Greater Berlin is required, it alone being competent in the matter, and that the health insurance societies may not conclude collective treaties with other medical organizations. However, any individual physician who accepts the terms of the treaty and complies with the general conditions for admission may become a panel physician if his application is approved by the committee on admission. A modification in the admission requirements as set forth in the award of Aug. 22, 1924, was made to the effect that 20 per cent. of all vacancies occurring on the panel of health insurance physicians shall remain open and no reappointments made. Another modification provides that new appointments to the panel shall be made quarterly instead of annually. The annual capitation fee of 7.50 marks remains unchanged. The fees due to members of the physicians' merger of Greater Berlin must be paid by the health insurance societies directly to the physicians' organization to be distributed by it among the members. The fees of other physicians may be paid direct. The physicians' merger of Greater Berlin has the

right to examine all physicians' statements for services rendered. With regard to the admission of physicians for the performance of roentgenographic work or massage, or for electrotherapy or physiotherapy, and so forth, the parties concerned are instructed to draw up a new agreement by April 30, 1925, on the basis of recent decisions of the federal insurance bureau. Until a new agreement shall have been reached, the provisions of the existing treaty remain in force. Only such physicians may be employed in the ambulatory clinics established by the health insurance societies as have been accepted by the committee on admission and meet the requirements demanded of health insurance physicians in general. The remuneration they shall receive must be agreed on by the leagues of health insurance societies and the physicians' merger of Greater Berlin. Of the physicians who are at present employed in the ambulatory clinics, only those may continue to serve as were appointed before April 5, 1924. Their contracts, however, may not be extended beyond the date of expiration. The recent award of the federal arbitration board does not constitute a final settlement of the much discussed problem of the ambulatory clinics mentioned above for the reason that there is a question whether that board has jurisdiction in the matter.

Suicide in Hamburg, Germany

An interesting analysis of the suicidal deaths occurring in Hamburg from 1909 to 1923 has been made by Professor Sieveking, the coroner of Hamburg, together with other collaborators, and a report on their studies has recently appeared in the *Deutsche medizinische Wochenschrift*. The number of suicides officially reported for the last five years of the period studied marks an increase over the statistics for the prewar period. But on analysis it was found that the net increase was due to the increase of suicide among the female population, whereas the percentage of suicidal deaths among the male population had decreased during the war years and was still below the record for the prewar period. That is all the more noteworthy when it is considered that the total population of Hamburg has increased only 33,000 since the war, and that the female population has increased more than the male population.

The distribution of suicidal deaths over the months of the year shows, in both the prewar and the postwar periods, two peaks, one in April and the other in August to October. That finding furnishes evidence of the northern character of Hamburg's population; in fact, it is asserted that suicide in Europe is a manifestation of the northern races. Only the northern countries (Sweden and Denmark) and Switzerland have the double peak; France and Italy, on the other hand, have only the one peak occurring in the spring, which predominates also in Prussia and Saxony. In the five years dominated by the war, the autumn peak drops out in Hamburg, and in each of the three five-year periods the spring apex predominates in the statistics of the female population. It would appear, therefore—for Hamburg at least—that the autumn peak is characteristic of the male population and the spring apex of the female population. Meteorological influences cannot play much of a part in the seasonal fluctuations, since May and September in Hamburg are recognized as fair weather months.

In Hamburg the number of suicidal deaths among the male population is in all age groups greater than the number recorded for the female population. Only in the 20-25 age group are the percentages approximately the same. This age group marked for the female population, during the five years preceding the war, approximately the maximum of suicidal deaths, whereas, during the five-year war period, the 70-80 age group and during the postbellum period the 80-90 age group present about twice as high percentages, which furnishes evidence of the increasing economic distress among aged women. Among the male population, only a slight increase was noticeable in the 20-30 age group. The percentage was highest in the 70-80 age group, owing to the cares of old age.

With regard to the mode of suicidal death, the marked decrease, during the war years, of suicidal hangings and shootings shows that these are, in the main, methods employed by men, whereas the continued sharp increase in poisonings points to the increase of suicide among the female population. This is shown more clearly by the analysis of the suicidal attempts during the years 1919-1924, in which the women vastly predominate. In the case of both sexes, sexual causes play the principal part, although from year to year economic distress becomes more and more prominent as a contributing cause.

A comparison of the vocations of the victims did not elicit much that was interesting. It was noticeable, however, that the percentage of suicides was lowest among Catholic women and highest among Jewish women. The distribution over the various sections of the city points to the highest percentage of suicide among the wealthy classes; but this is only apparent, for the high percentage of deaths among female house employees has increased to a great extent the number of suicides occurring in the wealthier sections. But if we consider that these sections of the city have comparatively few children, and that suicide does not affect the 0-10 but occurs first in the 10-20 age group, it becomes evident that the disadvantage is on the side of the more densely populated sections of the city occupied by the poorer classes.

Among the female suicides there were considerably more married (or formerly married) than unmarried persons. The number of elderly men committing suicide after the war was much increased. It may be noted that the number of poisonings after the war increased enormously, carbon monoxid being the principal agent chosen by elderly women and especially by elderly men. Among those who selected hydrocyanic acid, the chemical and medical professions were chiefly represented. The so-called mutilating forms of death were often preferred by juveniles and especially by persons who were frankly insane.

The anatomicopathologic findings on the bodies of suicides furnish evidence that suicidal subjects are almost without exception ill and that self-destruction was carried out while they were in a state in which they were scarcely able to control their actions; that suicide, therefore, is to be regarded as resulting from inadequately controlled emotions. Findings in female suicides, especially, point to suicide as due to aberrant emotions. In more than 50 per cent. of the cases before the war and in 75 per cent. of the cases after the war, physiologic or pathologic changes in the genitalia of female suicides could be noted.

Alcoholism was found to play a very slight part in the anatomic findings in suicides, scarcely 10 per cent. of the male suicides of the prewar and the postbellum periods having been addicted to alcoholism. Among the female suicides there were none whatever known to be addicts to alcohol.

Secondarily, infectious diseases may be incriminated among the anatomicopathologic findings. Acute infectious diseases were scarcely ever observed. Tuberculosis and syphilis furnished the largest number of cases among the infectious diseases.

With certain exceptions, the results of this research constitute a confirmation of former inquiries and show that, on the cadavers of most suicides, changes may be demonstrated that explain directly or indirectly the suicidal death of most victims.

Marriages

CLAUDE A. THOMPSON to Miss Jean Lancaster, both of Muskogee, Okla., at Waxahachie, Texas, Dec. 12, 1924.

WILLIAM R. HOUSTON to Mrs. Julia Scales Walton, both of Augusta, Ga., at Shanghai, China, February 14.

GEORGE HARLAN WELLS to Miss Emma Mertz, both of Philadelphia, at Baltimore, February 12.

JOHN W. GUNN to Miss Susie M. Park, both of Watervliet, Mich., at Coloma, Mich., January 19.

ABRAHAM S. GORDON, New York, to Miss Selma F. Dichter of Brooklyn, Dec. 19, 1924.

EDWARD ADAMS to Miss Maude Elizabeth Hunt, both of New York, February 27.

Deaths

James Mitchell Neff ✠ Chicago; Medical Department of the University of Illinois, Chicago, 1898; formerly assistant professor of surgery, Northwestern University Medical School, Chicago, and instructor of surgery, Rush Medical College, Chicago; member of the Chicago Surgical Society; consulting surgeon to the Illinois Central Railroad; on the staffs of the Illinois Central and Roseland hospitals, and at one time on the staffs of the Mercy and St. Luke's hospitals; served in France with the British army during the World War; aged 50; died, March 9, at the Presbyterian Hospital, of cerebral hemorrhage.

Charles Shepard Rodman, Waterbury, Conn.; Medical Department of Columbia College, New York, 1868; member and past president of the Connecticut State Medical Society and the New Haven County Medical Society; formerly member of the board of health and board of education; member of the House of Delegates of the American Medical Association, 1902-1903; on the staff of the Waterbury Hospital; aged 79; died, February 15, following a long illness.

Israel J. Biskind ✠ Jerusalem, Palestine; Cleveland College of Physicians and Surgeons, Medical Department Ohio Wesleyan University, 1899; instructor in obstetrics and gynecology at his alma mater, 1900-1901; practiced in Cleveland from 1899-1919; formerly on the staff of the Mount Sinai Hospital, Cleveland; served with the medical unit of the Zionist Organization since 1919; aged 52; died, February 13, of cerebral embolism.

Charles Bingham Penrose ✠ Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1884; formerly professor of gynecology at his alma mater; on the staffs of the Gynecean, Pennsylvania and German hospitals; president of the Zoological Society of Philadelphia; author of "Text-Book of Diseases of Women"; aged 63; died on a train, February 27, of heart disease.

Paul Frederick Finch, Cleveland; Western Reserve University School of Medicine, Cleveland, 1916; served in the M. C., U. S. Army, during the World War; acting assistant surgeon, U. S. Public Health Service, stationed at the U. S. Marine Hospital, No. 6, where he died, Dec. 28, 1924, of pneumonia and diabetes mellitus, aged 38.

David Livingston Rundlett ✠ Sioux Falls, S. D.; Tufts College Medical School, Boston, 1901; member of the Society of American Bacteriologists; aged 51; died, February 18, at Minneapolis, following an operation on the gallbladder.

Duncan Williamson Blake, Jr., Gloucester City, N. J.; Jefferson Medical College of Philadelphia, 1892; formerly member of the board of health, and medical inspector of the city schools; aged 54; died, February 15, of pneumonia.

Milton Keelor Neiffer ✠ Wyncote, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1892; on the staff of the Abington (Pa.) Memorial Hospital, where he died, February 13, aged 54, of chronic myocarditis.

Jose Maria de Bermingham, New York; Medical Department of the University of the City of New York, 1896; member of the Medical Society of the State of New York; aged 49; died, February 15, of chronic nephritis.

Arthur Wesley Greene, Ahoskie, N. C.; University College of Medicine, Richmond, Va., 1904; member of the Medical Society of the State of North Carolina; aged 46; died, February 4, at a hospital in Norfolk, Va.

William Andrew Mearns, Hanover, Ont., Canada; University of Toronto Faculty of Medicine, 1881; formerly member of the board of education; aged 66; died, February 15, at the Toronto General Hospital, of pneumonia.

Austin George Byrd, Boise, Idaho; Medical Department of the University of Illinois, Chicago, 1909; served in the M. C., U. S. Army, in France, during the World War; aged 40; died, Dec. 17, 1924, at a local hospital.

Henry Barnard Ritter, Louisville, Ky.; Louisville Medical College, 1879; formerly professor of obstetrics, University of Louisville School of Medicine; on the staff of St. Joseph's Infirmary; aged 65; died, February 19.

Edwin Lawrence Willson, Marysville, Kan. (licensed, Kansas, 1901); Civil War veteran; formerly mayor of Marysville and member of the state legislature; aged 86; died, February 16, following a long illness.

Lee L. Mahan, Hempstead, Texas; Kentucky School of Medicine, Louisville, 1885; member of the State Medical Association of Texas; aged 63; died, February 15, at the Johns Hopkins Hospital, Baltimore.

Asa Roy Freeman, Bloomington, Ill.; St. Louis University School of Medicine, 1907; member of the Illinois State Medical Society; aged 42; died, February 20, of asphyxia due to gas presumably self-administered.

William P. Hicks, Earl, Ark.; Louisville Medical College, 1907; member of the Arkansas Medical Society; county health officer; member of the board of education; aged 49; died, February 7, of pneumonia.

John A. Mellon ✠ Columbiana, Ohio; Cleveland Homeopathic Medical College, 1898; aged 49; died, February 3, at the Central Clinic and Hospital, Salem, of septicemia following an infection in a finger.

Frank Mims ✠ Marietta, Ga.; University of Georgia Medical Department, Augusta, 1897; served in the M. C., U. S. Army, during the World War; aged 48; died, February 15, of pneumonia.

Charles Anderson Hauber, Chehalis, Wash.; Cooper Medical College, San Francisco, 1894; served in the M. C., U. S. Army, during the World War; aged 58; died, January 29, of septicemia.

Samuel Ray Evans, Claremore, Okla.; Fort Worth (Texas) School of Medicine, 1914; served in the M. C., U. S. Army, during the World War; aged 42; died, February 16, of gastric ulcer.

Edward Everett Myers ✠ New York; Medical School of Harvard University, Boston, 1901; on the staff of St. Luke's Hospital; aged 51; died, February 25, at Vienna, Austria, of pneumonia.

Edward Charles Pechin ✠ Camden, N. J.; Jefferson Medical College of Philadelphia, 1902; member of the Pathological Society of Philadelphia; aged 46; died, February 17, of meningitis.

Alpheus Barts Conaway, Marshalltown, Iowa; Eclectic Medical Institute, Cincinnati, 1875; aged 75; died recently, at the Glendale (Calif.) Sanitarium and Hospital, of pneumonia.

Charles Reiterman, Los Angeles; State University of Iowa College of Medicine, Iowa City, 1873; formerly a practitioner in Chicago; aged 73; died, February 11, of carcinoma.

Caroline E. Smith, Parkesburg, Pa.; Woman's Medical College of Pennsylvania, Philadelphia, 1883; aged 71; died in February, at the Coatesville (Pa.) Hospital, of pneumonia.

William Keller Miller, Alliance, Neb.; Rush Medical College, Chicago, 1872; formerly county coroner; aged 81; died, Dec. 27, 1924, at Gering, of influenza and heart disease.

Lillian G. Blanchard, St. Louis; American Medical College, St. Louis, 1906; formerly adjunct professor of physiology at her alma mater; aged 54; died, February 18.

William Timothy Holland, Boston; Tufts College Medical School, Boston, 1898; served in the M. C., U. S. Army, during the World War; died, February 10, of pneumonia.

Robert Updegraph Chapman, Des Moines; Chicago Medical College, 1888; Drake University College of Medicine, Des Moines, 1892; aged 87; died, January 30.

William T. McCurry, Little Rock, Ark.; Memphis (Tenn.) Hospital Medical College, 1897; member of the Arkansas Medical Society; aged 54; died, February 19.

Paul Albert Hudnut ✠ Northampton, Mass.; Medical School of Harvard University, Boston, 1898; aged 56; died, January 24, at New York, following an operation.

Willard Biddle Gilman, Lakeview, N. C.; Hahnemann Medical College of Philadelphia, 1869; aged 79; was instantly killed, February 13, when struck by a train.

Charles Stanley Emery, Ocean Beach, Calif.; Kentucky School of Medicine, Louisville, 1890; aged 59; died, January 2, at San Diego, of arteriosclerosis.

Charles M. Morfitt, Baltimore; University of Maryland School of Medicine, Baltimore, 1861; Civil War veteran; aged 89; died, February 15, of senility.

Axel Victor Grafstrom, Jamestown, N. Y., Medical Department of the University of the City of New York, 1893; aged 66; died, February 18, of pneumonia.

Charles E. Gould, Rochester, Ind.; Medical College of Ohio, Cincinnati, 1884; member of the Indiana State Medical Association; aged 65; died, Dec. 24, 1924.

Eugene Stadelman, Cananea, Sonora, Mexico; University of Pennsylvania School of Medicine, 1895; aged 51; died, February 15, of heart disease.

George Addison Corning, Hampton, Iowa; Hahnemann Medical College and Hospital, Chicago, 1874; aged 89; died, February 18, of pneumonia.

Lewis Jefferson Spickard, Blanchester, Ohio; Medical College of Ohio, Cincinnati, 1897; aged 64; died, February 16, at Otala, Fla., of pneumonia.

Benjamin Warren Severance ✠ Phoenix, N. Y.; Cleveland University of Medicine and Surgery, 1882; aged 70; died suddenly, February 18.

George W. Joiner, Lawson, Mo.; University Medical College of Kansas City, 1897; aged 63; died, January 20, at Elmira, of pneumonia.

Charles Boydstone Carr, Kenmore, Ohio; Medical College of Ohio, Cincinnati, 1890; aged 56; died, February 14, of heart disease.

James W. Davis, Livingston, Tenn.; University of Tennessee College of Medicine, Memphis, 1888; aged 55; died, January 18.

Sullivan Adelbert Gaskill, Covington, Pa.; Baltimore Medical College, 1890; aged 77; died, January 10, of cerebral hemorrhage.

Sherman Edwin Ayars, Philadelphia; Eclectic Medical College of the City of New York, 1884; aged 71; died, February 18.

Thomas Hardy Smith ✠ Pomona, Calif.; St. Louis Medical College, 1882; aged 69; died suddenly, February 9, of heart disease.

Frank Wallace McCanon, Des Moines; Drake University College of Medicine, Des Moines, 1883; aged 64; died, February 6.

Joseph S. Le Pard, Potlatch, Idaho; University of Nebraska College of Medicine, Omaha, 1895; aged 61; died, Dec. 17, 1924.

Archibald F. Fletcher, Roswell, N. M.; Louisville (Ky.) Medical College, 1893; aged 56; died, Dec. 26, 1924, of uremia.

Frank H. Andrus, Westerville, Ohio; Starling Medical College, Columbus, 1880; aged 66; died, February 6, of cystitis.

Thomas McFeely, North Vernon, Ind.; Cincinnati College of Medicine and Surgery, 1869; aged 91; died, February 21.

Laurence M. Cahall ✠ Bridgeville, Del.; Jefferson Medical College of Philadelphia, 1886; aged 63; died, February 24.

William H. Davenport, Vincennes, Ind.; Jefferson Medical College of Philadelphia, 1881; aged 74; died, January 8.

William S. Benner, Columbus, Ohio (licensed, Ohio, 1896); also a minister; aged 94; died, January 30, of senility.

Charles W. Martinie, Mount Vernon, Ill.; Miami Medical College, Cincinnati, 1874; aged 77; died, February 12.

Archibald Franklin Swaney, Niles, Ohio; Starling Medical College, Columbus, 1903; aged 49; died, Dec. 7, 1924.

Asa Nowlin, Liberty Hill, Texas; Louisville Medical College, 1891; aged 58; died suddenly, in February.

James H. Sale, Dillsboro, Ind.; Medical College of Ohio, Cincinnati, 1870; aged 81; died, Dec. 21, 1924.

J. C. Carson, Rosewood, Texas (licensed, Texas, under the act of 1907); aged 70; died, February 13.

Joseph H. Smith, Albion, Neb.; Detroit Medical College, 1870; aged 82; died, February 7.

Jonas L. Basham, Louisville, Ky. (years of practice); aged 82; died, February 11.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

TRICALCINE NOT ACCEPTED FOR N. N. R.

Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following report.

W. A. PUCKNER, Secretary.

The Laboratoire des "Produits Scientia," Paris, France, markets "Tricalcine" in the form of powder, cachets, compressed tablets, chocolate tablets and also cachets of "Tricalcine adrénalinée," stated to contain 3 drops of a 1 to 1,000 solution of epinephrin per cachet, cachets of "Tricalcine Méthylarsinée," stated to contain 0.01 gm. of sodium cacodylate to each cachet, and cachets of "Tricalcine Fluorée" stated to contain 0.02 gm. of calcium fluorid.

The various forms bear no statement of the composition of Tricalcine. According to an advertising circular, Tricalcine "contains all the active principles of tribasic phosphate, of the carbonates and of the other salts of lime and of magnesium necessary to the organism." In an advertising brochure, "Treatment by recalcification, Its technique—Indications—Results, By Dr. Emile Sergent, Member of the Academy of Medicine, Physician to the Charite Hospital," the author states that he employs the salts advised by Ferrier in the form of a powder as follows: "Calcium carbonate 0 gr. 30, Tricalcic phosphate 0 gr. 50, Sodium chlorid 0 gr. 15, Calcined magnesia 0 a 0 gr. 10," for one cachet. In another circular, "La Recalcification en Art Dentaire," it is stated that the formula of Ferrier and of Tricalcine are the same. From these somewhat indefinite and conflicting statements and the unsupported claim that "Tricalcine owes its therapeutic properties not only to its composition, but more especially to a special process of manufacture," it is evident that Tricalcine is claimed to be a mixture containing calcium phosphate and calcium carbonate as its essential ingredients, but that its exact composition is not declared. The advertising for Tricalcine has for its basis the discarded lime-starvation theory.

Under the caption, "When Tricalcine should be prescribed," the following appears:

"Tricalcine should be taken: During pregnancy and while nursing an infant; During the period of dentition and of growth; Also for the treatment of the following complaints: Anaemia, Chlorosis, during Convalescence; Nervous debility, Nervous Dyspepsia, Neurasthenia; Diabetes, Glycosuria, Phosphaturia, Albuminuria; Persistent Diarrhoea, Enteritis; Rickets, Fractures; Chronic Bronchitis, neglected Colds; Also, in a general way, all Pulmonary Affections.

"In the case of pulmonary affections, no matter how far advanced the disease may be, it is never too late to make use of Tricalcine, provided this is persevered with for a more or less prolonged period. Even in the severest cases, the patient may still hope to recover by taking this new remedy, whilst continuing his usual occupation, without being obliged to take to his bed."

There is no satisfactory evidence that in this long list of diseases there is actually a deficiency of calcium in the blood. The recommendations for the use of Tricalcine have, therefore, no satisfactory experimental basis. The recommendation that the tuberculous may, with the aid of Tricalcine, remain at work is to be deprecated. The physician is informed, perhaps in anticipation of the failure of Tricalcine treatment, that "In certain cases, it proves advisable to strengthen the recalcifying action of the Tricalcine by the addition of other remedies." For this purpose he is supplied with "Adrenalinated Tricalcine." It is held by the proprietors that:

"Adrenalinated Tricalcine should, therefore, be prescribed whenever it is desired to increase the action of the Tricalcine and also in every case which shows the phenomena of suprarenal insufficiency (fatigue, anaemia, emaciation, arterial hypotension, cardiac irregularities, fainting fits, etc.)."

It is generally admitted that little or no systemic effect is produced when epinephrin is administered by mouth (Pharmacology of Epinephrin, Joseph T. Wearn, THE JOURNAL, Nov. 8, 1924, p. 1508), and hence this preparation is as irrational as the claims advanced are unwarranted.

"Methylarsenated Tricalcine," a preparation of Tricalcine with 0.01 gm. of sodium cacodylate to each cachet, is proposed "whenever it is desired to stimulate the organism and to raise its tone." So that the physician may have variety, it is proposed that he alternate his prescription for the "methylarsenated" form with the "adrenalinated" variety, with a course of "pure" Tricalcine in between.

"Fluorated Tricalcine," said to be a mixture of Tricalcine with calcium fluorid, is proposed because "Fluorin is indispensable for the formation of the cellular nucleus of the organism; it fixes the phosphorus and thus prevents the decalcification. It is, moreover, a good remedy for the stomach." The promoters of Tricalcine assure us that this form possesses "the highest claim to be included in the daily therapeutics in cases of tuberculosis, either alone or alternatively with the other varieties of Tricalcine."

The propaganda of the proprietors of Tricalcine must tend to lead to the indiscriminate administration of a complex mixture of calcium salts. The chocolate tablets and the cachets have the name "Tricalcine" imprinted, and the glass containers have it blown in the glass; in this way a temporary patronage on the part of physicians will no doubt be transferred to the public.

In 1917, the Council, in its report on "The Russell Emulsion and the Russell Prepared Green Bone" (THE JOURNAL, June 23, 1917, p. 1931), stated that the overworked lime-starvation theory lacks any tangible confirmation. Since that time it has been abundantly shown that a deficiency of calcium can be detected in but few conditions. It is irrational to believe that calcium can be of benefit when there is already a normal quantity in the blood; moreover, the normal quantity cannot be exceeded. The calcium that is given under such circumstances is either at once excreted by the intestines or is not absorbed at all.

Tricalcine and its preparations are unacceptable for New and Nonofficial Remedies because (1) indefinite conflicting and unacceptable statements are made in regard to the composition of Tricalcine; (2) the product is marketed in a way to invite its promiscuous use by the public; (3) the extensive recommendations for its use are unwarranted, and (4) the combination of Tricalcine with, respectively, epinephrin, sodium cacodylate and calcium fluorid is unscientific.

AGRILIN NOT ACCEPTED FOR N. N. R.

Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following report. W. A. PUCKNER, Secretary.

Agrilin is the uninformative name under which Lehn & Fink, Inc., New York, market a mixture of liquid petrolatum and agar. The preparation is stated to contain 38.6 per cent. of liquid petrolatum and 2.25 per cent. of agar; a tablespoonful—the recommended dose—will contain about 6 c.c. of liquid petrolatum and only about 0.35 gm. of agar. Agrilin is offered to the medical profession and also—through the trade package and newspaper advertisements—to the public.

Agrilin is sold with claims that are extravagant and unwarranted. An advertising circular contains the statement:

"Practically all laxatives are drugs. This is just as true of fruit and vegetable laxatives which, when taken in small quantities, may possibly only produce a mild effect, as it is of violent laxatives like Castor Oil, Mineral Waters, Epsom and Rochelle Salts, or Calomel."

This, in effect, asserts that fruits are injurious. The circular is misleading in that it contains statements which, in effect, amount to an assertion that castor oil contains ricin. That this is the meaning of these statements is evident from the following:

"Possibly the dislike for Castor Oil that almost everyone has may merely be our instinct for self-preservation. We don't want to take a poisonous drug."

It is stated in the circular that mineral oil (liquid petrolatum) is an ideal lubricant. While liquid petrolatum is useful, it is not ideal. An ideal lubricant would readily mix with moist substances in the intestines.

It is claimed that by the use of Agrilin the phenomenon of leakage (seepage) of liquid petrolatum is avoided. The emulsification of liquid petrolatum may decrease this tendency, but it does not entirely avoid it. The emulsion is broken up in the intestines, and leakage has occurred with such emulsions. Under the caption "Who should take AGRILIN" the indiscriminate use of laxatives is suggested thus: "Every person whether young or old, active or sedentary, can take AGRILIN with benefit." That is obviously not true. Healthy persons who are not constipated are not benefited by Agrilin. An advertisement in the Cleveland *Plain Dealer* thus invites the attention of the public to Agrilin:

"A new feeling of health and energy when you correct constipation this way. You will be amazed at the improvement in your bodily health and mental clearness when nature is helped correctly to eliminate the system's wastes and poisons."

Agrilin is inadmissible to New and Nonofficial Remedies because (1) the name is not descriptive of its composition; (2) it is marketed with claims that are unwarranted and misleading, and (3) it is advertised indirectly and directly to the public and thus furthers the ill-advised use of laxatives.

Correspondence

FIRST USE OF POLYGRAPH AND SPHYGMOGRAPH

To the Editor:—In the correspondence column (THE JOURNAL, February 28, p. 697) Dr. A. E. Fossier calls attention to the fact that Sir James Mackenzie did not devise the polygraph, as stated in the London letter (THE JOURNAL, February 14, p. 527). It is true, as mentioned in the editorial comment, that Vierordt made the first pulse tracings in 1855, and that Marey devised his sphygmograph in 1860. But Marey also constructed the first polygraph shortly after this, and shows several records in his book published in 1863: "Physiologie médicale de la circulation du sang."

Alonzo T. Keyt (1827-1885) of Cincinnati in 1875 devised what he termed a compound sphygmograph for the purpose of recording simultaneous tracings of the apex (maximal impulse) and of an artery. In addition, he embodied a chronograph and emphasized its importance. In his book issued posthumously in 1887 on "Sphygmography and Cardiography," more than a hundred polygraphic (simultaneous apex and arterial) tracings appear. Marey was familiar with Keyt's instrument, and before describing it (La circulation du sang, Paris, 1881, p. 700) says: "Dr. A. T. Keyt, in 1875, published the description of a new sphygmograph having the advantage of easy application to different arteries and also to the apex of the heart." (Le docteur A. T. Keyt a publié, en 1875, la description d'un nouveau sphygmographe présentant l'avantage d'une application facile sur différentes artères et même sur la pointe du cœur.) Following Keyt's lead, Marey incorporated a chronograph in the later models of his polygraph.

Wedemeyer (Untersuchungen über den Kreislauf des Blutes, Hanover, 1828) first investigated the venous pulse with a water manometer. However, in all probability, Chauveau and Marey (1861), as also Friedreich (Ueber den Venenpuls, *Deutsch. Arch. f. klin. Med.* **1**:241, 1865), made the earliest graphic records of the venous pulse. Potain (Des mouvements et des bruits qui se passent dans les veins jugulaires, *Bull. et mém. Soc. méd. d. hôp. de Paris*, 1867) also recorded the venous pulse and in subsequent years made many polygraphic tracings (jugular and radial), as did other

investigators. Marey (La circulation du sang, Paris, 1881, p. 695), in discussing Potain's observations, says: "Figure 339, which was called to my attention by Potain, is an example of the venous pulse in the two jugulars taken simultaneously with the arterial pulse. Various data show that of the two venous waves, one precedes by an instant the arterial pulsation, that is, the pulsation that corresponds to the systole of the auricle; the other arrives a little later, at the same time as the radial pulse, and corresponds to the systole of the right ventricle." (La figure 339 qui m'a été communiquée par Potain est un exemple du pouls veineux des jugulaires recueilli en même temps que le pouls artériel. Des repères nombreux montrent que des deux soulèvements veineux, l'un précède d'un instant la pulsation artérielle, c'est le reflux qui correspond à la systole de l'oreillette; l'autre arrive à peu près en même temps que le pouls radial et correspond à la systole du ventricule droit.)

Therefore, it is incorrect to state that Mackenzie "first made simultaneous records of the arterial and venous pulses" (Garrison: An Introduction to the History of Medicine, Ed. 3, 1924, p. 735). What he actually did was to modify the Dudgeon sphygmograph in the early nineties by affixing a tambour, which permitted an additional tracing either of "apex beat, carotid, venous or liver pulse or the respiratory movements" (Mackenzie: The Study of the Pulse, Edinburgh and London, 1902, p. 10). Because of its simplicity and portability, he called this apparatus a "clinical polygraph." On account of the inconvenience arising from using smoked paper and because it was impossible to secure a long tracing with this instrument, he later devised an ink polygraph.

While the credit for inventing the polygraph does not rightfully belong to Mackenzie, he was the first to point the way toward a correct interpretation of the records obtained. Our present knowledge of disordered heart action rests on his original work. Actually, he richly deserves the title, "father of modern cardiology."

Emmet F. Horine, M.D., Louisville, Ky.

To the Editor:—I am glad that Dr. Fossier has called attention to the error regarding the discovery of the polygraph. While the simple tambours were first employed by Vierordt in 1855, Marey first used the multiple tambour. Long before the time of Mackenzie, an instrument of this type was used by Hürthle. In 1898, when I first worked in Hürthle's laboratory, I attempted to obtain differences in the time relationship of the cardiac impulse and the carotid and radial pulses. This required the simultaneous working of three receiving and three recording tambours, the latter registering their excursions on the smoked paper of the kymograph above the second markings of a chronograph.

Thus, the only difference between this early method of registration by means of multiple tambours and that of Mackenzie is that the various appliances were fastened to a small drum, which could be conveniently moved from place to place, so as to be able to make records at the bedside. Such an instrument was constructed by Mr. Dressler about the year 1903. This early model is still in the physiologic laboratory of Columbia University.

May I add another word or two? Advertisements are published for an instrument that is known as the Baumanometer. Is there any reason for attaching this name to this instrument? The sphygmomanometer dates from the time of Vierordt. It has been variously modified; for example, by Gürtner. This early instrument was adapted to register the pressure in the arteries of the index finger. Later on, Riva-Rocci adapted it to the brachial artery. It consisted of an arm piece, a mercurial manometer and a pressure bulb. The sphygmomanometers that have appeared in recent years do not differ essentially from this early instrument; i. e., they contain the same parts, and the general mechanism and method of registration are absolutely the same. By attaching the name of the manufacturer to this classical instrument, we simply distort historical facts and give credit to some one who does not rightly deserve it.

Russell Burton-Opitz, M.D., New York.

"SURVIVAL OF MAMMALIAN TESTIS IN VITRO"

To the Editor:—In the article of Dr. Clayton J. Lundy on this subject (The Journal, March 7, p. 745), the author, after an excellent series of experiments, concludes that "testis tissue of the rat preserved twenty-four hours or longer outside the body cannot be used for successful transplantation." While this is undoubtedly the case in the rat, the human testis may be transplanted, according to experiments I have made, with confidence of "taking" within the first forty-eight hours after removal from the donor, provided the proper technic for preservation and implantation has been practiced. On page 747, Dr. Lundy further states that "when the whole testis is implanted, the tunica albuginea presents a barrier to the entrance of the phagocytic cells and retards phagocytosis." While this may also be true in the rat, implanted testes in their entirety may, and very often do, heal successfully if the technic described as "lanternization," consisting of partial ablation of the tunica albuginea, is practiced with fine scissors, or destruction of bits of the albuginea is done with the electrocautery and the tunica vasculosa thereby exposed. This will permit the ingress of nutritive elements into the transplanted testis from the recipient which Dr. Lundy could not obtain in his transplantations in toto.

Max Thorek, M.D., Chicago.

BLACK DAMP AND WHITE DAMP IN MINES

To the Editor:—In Medical News (The Journal, February 28, p. 683) you have noted under the news from Ohio, "Asphyxiation in Caissons," the statement that an investigation of the death of four men "showed that the cause was carbon monoxid asphyxia." There was no evidence of carbon monoxid about the premises, nor suspected from the nature of the deaths which occurred. The cause was "black damp," a condition in which there is not enough oxygen to support respiration.

The only item which we have published on the matter occurred in *Ohio Health News* (**1**:3 [Feb. 15] 1925). In this the statement is given correctly. In further discussion of the confusion, I would point out that about mines carbon monoxid gas is called "white damp," owing to the usual association of smoke or powder fumes. In the case under question, gas analyses showed, for example, carbon dioxid, 6.3 per cent.; oxygen, 0.7 per cent.; absence of carbon monoxid, methane and hydrogen. The inference was that the undetermined residue was nitrogen, argon and similar inert gases found in the atmosphere. The fact that the amount of carbon dioxid found was far less than the amount of oxygen that had disappeared from the air (which contains approximately 21 per cent.) proves the condition to be the one ordinarily called "black damp." The four men lost consciousness without any warning signs. The regretful thing is that one went down after the other without taking an oxygen apparatus, nor even waiting for a rope to be attached in case asphyxiation occurred. The man who finally completed the rescue did so after from 10,000 to 12,000 cubic feet of fresh air had been forced down into the caisson (64 feet deep) for a matter of about five minutes.

E. R. Hayhurst, M.D., Columbus, Ohio.

CHRONIC PROGRESSIVE ENLARGEMENTS OF LYMPH GLANDS

To the Editor:—I note with interest in the February 28 issue of THE JOURNAL that Brill, Baehr and Rosenthal have described "a hitherto undescribed type" of "generalized giant lymph follicle hyperplasia of lymph nodes and spleen."

Without desiring to enter any claim of priority, I wish to call attention to the fact that in 1916 I presented to the Association of American Physicians on behalf of Dr. J. L. Yates and myself a paper entited "Leukaemia, Pseudoleukaemia (Aleukaemia) and Hodgkin's Disease," in which the pathologic lesion in question is described under the suggested name lymphoblastic aleukemia (*Tr. Am. Phys.* **31**:168, 1916; *Bull. Johns Hopkins Hosp.* **28**:151 [April] 1917) in these words:

> In the second main group of cases we find a large-celled proliferation infiltrating the whole gland. This apparently begins with a marked proliferation of the large cells of the germinal centers, a proliferation which is atypical and which fails also to show the differentiation into lymphocytes. In very early cases there may be a thin collar of lymphocytes about these extremely large germinal centers. In cases slightly later, there are architectural indications of very large germinal centers but no lymphocytes, and ultimately there is a general infiltration of the gland with these large cells and obliteration of the normal architecture. There may be some fibroblastic proliferation, and giant cells may be found. From the character of the predominant cell this might be termed the lymphoblastic group [of aleukemias].

C. H. BUNTING, M.D., Madison, Wis.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

DETERMINATION OF CALCIUM IN BLOOD

To the Editor:—Please give the chemical process of determining quantitatively the calcium content of the blood.

E. O. HARROLD, M.D., Marion, Ind.

ANSWER.—Kramer and Tisdall, and Clark have described methods whereby the calcium is directly precipitated from the serum, plasma or whole blood without ashing or removal of the proteins. This direct precipitation has obviated a very troublesome step in the determination, and not only simplified but probably increased its accuracy. The method, however, requires a highly refined chemical technic. The following is taken from Practical Chemical Analysis of Blood by Victor C. Myers, Edition 2, St. Louis, C. V. Mosby Company, 1924, p. 174:

"Since calcium is essentially a constituent of the plasma, and not the cells, the technic will be outlined for serum and plasma. Obviously, if plasma is to be used it must be citrated, not oxalated. For this purpose a saturated solution of sodium citrate is generally used. One c.c. (containing about 900 mg. sodium citrate), p_H 7.4, is adequate for 10 c.c. of blood, although this is about the minimum quantity. Serum is preferable to plasma for the calcium estimation. In the method described the technic of Clark is used.

"*Method.*—Pipette 1 to 5 c.c. of serum or citrated plasma in a 50 c.c. conical centrifuge tube and, while rotating the tube, slowly add 3 per cent. ammonium oxalate, equal in volume to one half of the amount of serum or plasma. Mix thoroughly and allow to stand over night. Rub down walls of the tube with a rubber policeman (washing the policeman with a small amount of distilled water), and centrifuge at moderate speed (1,800 R. P. M.) until clear; usually five minutes is ample time. Completely remove the supernatant liquid by means of a siphon (Tisdall has very recently pointed out that the supernatant liquid may be removed by careful decantation), stir up the precipitate with a fine stream of cold, distilled water, washing down the walls of the tube, using in all approximately 35 c.c. of water. Centrifuge immediately and completely siphon off the wash water. Dissolve the precipitate in 5 c.c. of approximately normal sulphuric acid, heated to 75 C., and titrate with 0.01 N potassium permanganate to the first faint pink. One c.c. of 0.01 N potassium permanganate is equivalent to 0.2 mg. of calcium.

"The following simple formula may be used for the calculation: Titration in c.c. $\times 0.2 \times \frac{100}{\text{c.c. of serum employed}}$ = mg. of Ca to 100 c.c. serum."

The following are references to the work of Kramer and Tisdall, and Clark:

Kramer, Benjamin; and Tisdall, F. F.: A Simple Technique for the Determination of Calcium and Magnesium in Small Amounts of Serum, *J. Biol. Chem.* **47**: 475 (Aug.) 1921. Tisdall, F. F.: A Note on the Kramer-Tisdall Method for the Determination of Calcium in Small Amounts of Serum, ibid. **56**: 439 (June) 1923.

Clark, G. W.: The Micro-Determination of Calcium in Whole Blood, Plasma and Serum by Direct Precipitation, *J. Biol. Chem.* **49**: 487 (Dec.) 1921.

LIABILITY FOR CERTIFYING TO INSANITY

To the Editor:—A physician, licensed to make insanity examinations, is requested to certify to the insanity of some named person. In support of the request there is submitted an affidavit made by a stranger to the physician, in which he has sworn to the supposed facts of the case and that the person whose insanity is to be certified to is in fact insane. The physician has no personal knowledge of the case. He makes no examination of the supposedly insane person, for we have no facilities here for keeping such patients under observation. If under such circumstances, and relying solely on the affidavit of a stranger, the physician certifies that the person named therein is insane, is he liable in damages if ultimately it be proved that such was not the case?

———, California.

ANSWER.—A physician who certifies to insanity, whether a licensed examiner in insanity or not, must use due care and ordinary knowledge and skill, and must exercise his best judgment. Furthermore, he must comply strictly with the requirements of law with respect to the procedure leading up to the issue of his certificate and to the form and execution of the certificate itself. A physician who certifies to the insanity of any person on the sole basis of an affidavit made by a third person, whether by a stranger to the physician or not, without personal knowledge on the part of the physician as to the truth of the facts sworn to and without examining the supposedly insane person, can hardly be said to have met the requirements stated above. Even though a community has no place in which persons suspected of being insane can be held under observation, a physician may still examine the suspect under such conditions as are possible. The fact that he cannot make such an examination as he would like to make does not excuse him from making such an examination as he can make, and he should make that examination or else not certify to the mental condition of the patient. Conceivably, a licensed examiner in lunacy might be authorized by statute to certify to insanity on the basis of an affidavit and without an examination of the patient, but an examination of the laws of California has disclosed no statutory authority for such a procedure. It is believed that a physician who certifies to insanity on the basis of an affidavit made by a stranger and without having personally examined the patient would be liable in damages if the certificate proved false.

POSSIBLE HAZARDS IN THE USE OF "DUCO"

To the Editor:—Can you inform me whether or not there is any special hazard involved in the use of "Duco," which is being used extensively on automobiles? Several automobile painters have asked me the question, and I am unable to answer them.

C. C. D., M.D., Essex, Conn.

ANSWER.—"Duco" is the brand name for a new type of resistant covering used in place of ordinary varnishes and paints. Its introduction within the last few years is revolutionizing the paint and varnish fields. We understand that it consists essentially of a nitrated cellulose dissolved in suitable solvents, so that a relatively high concentration is obtained without unduly increasing the viscosity of the solution. We know of no reports on the possible health hazard. Owing to its recent introduction, and consequent lack of information in the literature, an inquiry was addressed to the E. I. DuPont de Nemours & Co.; the medical director, Dr. A. K. Smith replied:

"'Duco' consists largely of the acetates of amyl, butyl and ethyl with the diluents denatured alcohol, toluene, butyl alcohol and amyl alcohol.

"As regards the health features, 'Duco' is not generally different from pyroxylin lacquers that have been in use for many years. Many million gallons of such lacquers have been used without any deleterious effects. The use of ben-

zene and allyl alcohol have purposely been avoided on account of their dangerous effect on the human economy.

"The only instruction necessary, therefore, in the application of 'Duco' or any similar lacquer is that the operation be carried on in a well ventilated place."

"DOWLING PACK" IN NASAL DISEASE

To the Editor:—Please inform me what constitutes the Dr. J. I. Dowling, Albany, N. Y., method of nasal treatment.

WILLIAM F. HILGER, M.D., Milwaukee.

ANSWER.—According to "A Manual of Diseases of the Nose, Throat and Ear," by E. B. Gleason, Ed. 5, "Dr. J. I. Dowling advises the use of cotton tampons saturated with 10 per cent. argyrol [protargin mild]. The tampons are placed with an applicator between the middle turbinate and the septum and extend back as far as the ostium of the sphenoid, the anterior end being pushed up to the level of the infundibulum. The tampons are allowed to remain in place for from ten minutes to an hour. During this time there is an abundant discharge of mucus, which greatly reduces the congestion of the ethmoid cells. Part of the argyrol is absorbed and acts as an antiseptic. Dowling states that a blanching of the tampons either as a whole or in spots indicates infection, because the mucous secretions of the nose do not decompose argyrol."

TREATMENT OF MIGRAINE AND OF INDOLENT ULCERS

To the Editor:—1. Please give me some information regarding the use of calcium lactate in treatment of attacks of severe migraine or headaches without apparent cause. 2. Also use of parathyroid and calcium in treatment of indolent ulcers (nonsyphilitic).

JOHN W. WILLIAMS, M.D., Honea Path, S. C.

ANSWER.—1. Dr. A. D. Bigland (*Brit. M. J.* **2**:1133 [Dec. 15] 1923) reports on the treatment of twenty cases of migraine with calcium lactate, giving brief case histories of ten. Sixteen patients were able to abort attacks by taking 30 grains (2 gm.) of calcium lactate within half an hour of the occurrence of the first evidence that an attack was impending.

2. Dr. W. R. Grove and H. W. C. Vines, M.B. (*Brit. M. J.* **2**:687 [Oct. 29] 1921) gave parathyroid gland substance, 1 grain (0.065 gm.) by mouth, daily, until varicose ulcers healed, and then continued the same dose twice a week for from three to four weeks. They observed that healing accompanied the return of ionized blood calcium to normal figures. They had failed to produce healing of varicose ulcers by the intramuscular injection of calcium chlorid. The work of Grove and Vines was not adequately controlled, and lacks confirmation.

MEDICAL HISTORY OF CHICAGO

To the Editor:—1. Who was the first physician in Chicago. 2. Who built the first hospital or medical college there and in what year?

MRS. E. C. WELSH, Hawthorne, Calif.

ANSWER.—1. Dr. William C. Smith was the first surgeon of Fort Dearborn (1803-1808). The first civil practitioner was Dr. Elijah D. Harmon, who came to Chicago in 1830. He served as surgeon of Fort Dearborn for about two years.

2. The first hospital to be erected in Chicago was the Chicago Hospital, founded by Daniel Brainard and associates in 1846. This was continued in 1847 as the Illinois General Hospital of the Lakes, and in 1851 as Mercy Hospital. The first building of Mercy Hospital was occupied in 1853. The first medical college building was erected by Rush Medical College in 1844.

DISTURBANCES IN SENSE OF TASTE—PARAGEUSIA

To the Editor:—I have a patient that says he has a salty taste in his mouth all the time. It is worse at times, but is always present. I cannot find any reference to this in my books. Can you give me any information?

J. F. GIBSON, M.D., Olympia, Wash.

ANSWER.—Disturbances in the sense of taste occur occasionally in connection with: local disease in the nasal or buccal cavity—caries of teeth, pyorrhea, etc., and possibly from electric disturbances caused by bimetallic contacts in tooth fillings; irritative lesions in the course of the nerves of taste, especially in that of the facial nerve during its path through the petrous portion of the temporal bone, and possibly lesions in the regions of the medullary or cortical centers. Transitory sensations of taste are sometimes experienced as the auras of epileptic seizures. Most of these causes, however, are uncommon. Subjective sensations of taste are more frequently symptoms of functional origin. Under such circumstances the symptom is symbolic in character and has some associative connection with emotional upsets. With such parageusia would be found other indications of a psychoneurotic kind. The determination of the significance and associations would require careful study by psychanalytic methods. Finally, it should be mentioned that disorders in taste are not uncommon in various forms of insanity, but again there would be other evidences of mental disease.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARIZONA: Phoenix, April 7-8. Sec., Dr. W. O. Sweek, 404 Heard Bldg., Phoenix.

COLORADO: Denver, April 7. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

DISTRICT OF COLUMBIA: Washington, April 14. Sec., Dr. Edgar P. Copeland, 104 Stoneleigh Court, Washington.

HAWAII: Honolulu, April 13. Sec., Dr. Guy C. Milnor, 401 Beretania St., Honolulu.

IDAHO: Boise, April 7, Dir., Mr. Charles Laurenson, Boise.

ILLINOIS: Chicago, April 14-16. Supt. of Regis., Mr. V. C. Michels, Springfield.

IOWA: Des Moines, March 18-20. Sec., Dr. Rodney P. Fagen, Capitol Bldg., Des Moines.

MINNESOTA: Minneapolis, April 7. Sec., Dr. Thomas McDavitt, 734 Lowry Bldg., St. Paul.

MONTANA: Helena, April 7. Sec., Dr. S. A. Cooney, Power Bldg., Helena.

NEW MEXICO: Santa Fe, April 13-14. Sec., Dr. W. T. Joyner, Roswell.

OKLAHOMA: Oklahoma City, April 14-15. Sec., Dr. J. M. Byrum, Shawnee.

RHODE ISLAND: Providence, April 2-3. Sec., Dr. B. U. Richards, State House, Providence.

UTAH: Salt Lake City, April 7. Dir., Mr. J. T. Hammond, State Capitol, Salt Lake City.

Alabama January Examination

Dr. S. W. Welch, chairman, Alabama Board of Medical Examiners, reports the written examination held at Montgomery, Jan. 13-16, 1925. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 5 candidates examined, 4 passed and 1 failed. Six candidates were licensed by reciprocity. The following colleges were represented:

PASSED		
College	Year Grad.	Per Cent.
Emory University	(1924)	89.7
Tulane University	(1924)	86.6
University of Tennessee	(1924)	85.6
University of Toronto	(1910)	89.2

FAILED		
College	Year Grad.	Per Cent.
Birmingham Medical College	(1913)	71.3

LICENSED BY RECIPROCITY		
College	Year Grad.	Reciprocity with
Emory University	(1921)	Georgia
Baltimore Medical College	(1908)	Georgia
St. Louis College of Physicians and Surgeons	(1906)	Arkansas
Meharry Medical College	(1908)	Georgia
Vanderbilt University	(1922), (1923)	Tennessee

Oregon January Examination

Dr. U. C. Coe, secretary, Oregon Board of Medical Examiners, reports the written examination held at Portland, Jan. 6-8, 1925. The examination covered 11 subjects and included 110 questions. An average of 75 per cent. was required to pass. Of the 14 candidates examined, 9 passed, and 5, including 2 osteopaths, failed. The following colleges were represented:

PASSED		
College	Year Grad.	Per Cent.
University of California	(1924)*	82.1
Loyola University	(1924)	80.7
State University of Iowa College of Medicine	(1921)	90.3
University of Oregon	(1924, 5) 79.8, 80.1, 81.4, 82.2	82.9
McGill University	(1923)	80

FAILED		
College	Year Grad.	Per Cent.
Northwestern University	(1913)	74.8
University of Illinois	(1915)	74.8
University of West Tennessee	(1923)	60.6

* This candidate has completed his medical course, and will receive his M.D. degree on completion of a year's internship in a hospital.

Medical Economics

THE SUPPLY OF RURAL PHYSICIANS

A Response to Dr. Loeb

To the Editor:—I do not wish to take up your space with discussion of criticisms of my views on medical education; however, I do wish not to have them mistaken, and in Dr. Loeb's letter in the last issue of THE JOURNAL he has in two or three particulars incorrectly stated my views, inadvertently, I have no doubt, and doubtless through hasty reading. He says: "He ascribes this ['the *apparently* diminishing number of rural physicians'—W. A. P.] to the general urban movement in the United States." That is a mistake. As a matter of fact, in my paper I devoted a good deal of space to pointing out that it cannot be explained on this basis; that it is out of all proportion to the urban trend. He also says: " . . . he favors the subsidization of the physician by the rural community." That of all things I have vigorously opposed. He says, further: "He suggests . . . if necessary, the training of two classes of physicians, one with distinctly lower educational requirements." And it is also clearly inferred from the context that Dr. Loeb is quoting my views—in order to oppose them—when he says: "I am opposed to training two classes of physicians, one for the country and another for the city, one for the wealthier and another for the poorer classes." Those are not my views. I suggested, as a matter of fact, one universal degree for all medical men: those who want to go higher to build from this foundation as they do now. Only in this sense do I suggest two sorts of education, and that difference in the preparation of physicians we now have, and always will have. Dr. Loeb, for example, belongs to the class who have taken special training for special practice. That condition is perfectly natural, reasonable and inevitable; and is no more to be classed as a criticism against the plan of medical education that I advocate than the one that Dr. Loeb advocates.

As to one class of physicians for the city and the rich and another for the country and the poor, that is no more my position than it is Dr. Loeb's. As a matter of fact, if we are going to make capital by using our solicitude for the poor and the rural as an argument in this connection, I think, perhaps, I might claim more practical interest in them than does Dr. Loeb, for I am trying to train doctors for them; while under the present policy that Dr. Loeb advocates, the facts pretty well show that we are not training doctors either for the poor in the city or for the rural population. I am for training a good doctor that these people can afford, quite as good a doctor, experience shows, as we are producing now.

It is all right as a dramatic move to make gestures of indignation and for that purpose to read into such proposals as mine the idea that the proposal is to produce second class doctors for the poor and the country people, and to exclaim that they are entitled to as good doctors as anybody; but as a matter of fact it is largely a gesture, when we insist at the same time that the only doctor that is good enough for them is a doctor that will not go to them at all.

WILLIAM ALLEN PUSEY, M.D., Chicago.

More Practical Work Recommended

To the Editor:—I have been reading the articles on "Medical Education and Medical Service" by Dr. Pusey with a great deal of interest. I most certainly agree with him on the seriousness of the condition at the present time, and on the fact that we are what may be termed overtraining medical students. The same system of overtraining is being used in our high schools. Girls and boys graduate with the idea that it is beneath them to work with their hands, and they are unwilling to train to become expert in manual work.

I believe the medical course could be shortened, with less hours of leisure, less hours of laboratory work, and more hours of personal touch with the physician and the patient. Too much instruction is given in the specialties in the undergraduate course.

OLIVER T. OSBORNE, M.D., New Haven, Conn.

Useless Detail in Curriculum

To the Editor:—I have been reading with much interest the series of articles by Dr. Pusey on the supply of physicians in the rural districts. The one appearing in the current issue on the revision of curriculum and teaching methods seems to me so extraordinarily to the point that I cannot forbear to express a word of appreciation of the courage and perspicacity manifested. I have been a teacher for more than twenty-five years, and for several years back have had a growing sense of the amount of time wasted in useless detail, especially in the fundamental sciences of the medical curriculum. Under the organizations that are directing medical education, it is almost impossible for a school to plan a course in harmony with the recent advance in the science and art of medicine. I see a strong analogy to the situation a few centuries ago, when the leaders of medicine were so dominated by the theories of Galen that Harvey's immortal work was not allowed to be published in England.

H. C. WOOD, JR., M.D., Philadelphia.

Chinafication

To the Editor:—I want to tell you that I have enjoyed immensely Dr. Pusey's article on medical education. It should do much good, except for the Chinafication that has cursed so-called medical education so long. I hope he will make a dent in that.

GEORGE DOCK, M.D., Pasadena, Calif.

A Medical Examiner's View

To the Editor:—I have been following with a great deal of interest the articles touching the situation in reference to medical education.

Many of us who have as members of the board of examiners had an opportunity to observe the situation have for some time past realized that in a great many sections the situation has grown acute and that a remedy must speedily be found by those in the best positions to determine how it can be accomplished with least harm to medical education in general, or the matter will be taken in hand by legislators who, groping for a remedy, may make enactments ill advised and hurtful to medical progress and practice.

The Council on Medical Education and Hospitals has done and is still doing an excellent work, and no doubt will carefully weigh what has been said.

In reference to shortening the medical curriculum and time of study, I have been particularly impressed by the statement which was in substance that, were it put up directly to an institution or group of competent individuals with authority and a will to do so, the matter would be accomplished.

I believe any individual who will review his own course of study will realize that the textbooks found to have been of most service to him were not those treating the subject in hand most exhaustively, but were the brief, attractively written books dealing with the vital portions of the subjects, thereby constituting a framework easily comprehended, on which subsequent detailed knowledge might be accumulated. On one admittedly not a teacher, the impression forces itself that, if a group of properly trained educators were delegated to survey the medical literature of the colleges and likewise the studies of the premedical course by a careful selection of textbooks and a proper dovetailing of premedical and medical courses of study in a school of selected teachers, it would be possible to save a year's study and perhaps also obtain fair hospital advantages in the same time for the average individual, and that the sum total of medical knowledge would not thereby be materially lessened.

As I see it, the chief danger would be that such a course might get into the hands of mercenary institutions, and in that way the object be defeated; but by the cooperation of the Council on Medical Education and Hospitals and incidentally the examining boards throughout the country, together with a rigid inspection of such schools as might undertake the course as here mentioned, it seems to me that the matter might be safeguarded.

J. W. PRESTON, M.D., Roanoke, Va.
Secretary-Treasurer, Virginia State Board
of Medical Examiners.

Book Notices

ARROWSMITH. By Sinclair Lewis. Cloth. Price, $2, net. Pp., 448. New York: Harcourt, Brace & Co., 1925.

To the distinguished line of novels of medical interest that have been commented on from time to time in this department we may now add the latest work to come from the pen of Sinclair Lewis, known to medical readers particularly for the character of Dr. Will Kennicott in "Main Street." The son and the brother of physicians, reared in a medical atmosphere, Sinclair Lewis approached the writing of Martin Arrowsmith with unusual capabilities. He realized, however, the limitations under which any lay writer must labor in approaching a medical subject, and he took with him, as assistant and counselor, Paul De Kruif, Ph.D., formerly assistant in the department of bacteriology in the University of Michigan, and later member of the staff at the Rockefeller Institute. It is not surprising, therefore, to find in the novel much of the atmosphere of the life of De Kruif.

The first physician to enter the story is old Doc Vickerson, a good physician gone to seed trying to overcome the deadliness of a backward community. To him comes Arrowsmith as apprentice. Then, for perhaps the first third of the novel, we accompany Martin Arrowsmith through the university and the medical school. Here is accurate picturization of medical education mingled with biting satire at human frailty among the educators as well as among the young men who are trying to conform to the rituals and rules and regulations. In all our great schools, the intensely individual student has a difficult time. The boy who is somewhat different about thinking for himself, about working out ideas of his own, about proceeding a little faster or on a different road from the rest of the crowd, is likely to find himself buffeted about by the other kernels that are passing through the mill in an orderly manner. Sometimes the youth finds a sympathetic preceptor among the austere members of the faculty. When he does, his road is made easier and he is likely to have at the end an entirely different point of view from that of the antisocial being who has had no help in making the proper accommodations.

There comes early on the scene also in "Arrowsmith" Professor Gottlieb, prototype of the true scientist, living only for his research, never compromising with dishonesty. So far as we know, the character of Gottlieb is unique in fiction. He towers as an inspiration above the lesser people in this novel. For him there is none of the Lewis satire that devastates the minor medical personages. Such people as Dr. Angus Duer, who even as a student had his mind constantly fixed on money, as Ira Hinkley, medical missionary who was constantly adjusting science to religion, as Dr. Cliff Clawson, whose low ideals made him impossible as a physician, lend themselves readily to the piercing darts of humor. Even more pregnable is the famous Dr. Pickerbaugh, evangelistic health officer of the Eddie Guest school of hygienic poetry. Perhaps never before has Lewis reached the heights of satirical delineation that are reached in chapters of "Arrowsmith" dealing with the subject of "weeks," from old home week and go to church week to swat the fly week and better babies week, culminating at last in the great health show.

The novel takes Martin Arrowsmith through the career of country physician, health officer, member of a group clinic, and research worker in the great McGurk Institute to the combat of an epidemic of plague in the West Indies and at last to the life of a recluse investigator in the North woods. Through this runs romance, from the feeble flame of love that flickers at first for a college widow, through the marriage with Leora, most human of all of Sinclair Lewis' women, to the unsuccessful union with Joyce Lanyon, wealthy offspring of high society. And throughout this majestic novel, character after character appears and reappears, carried out perfectly to the existence for which his type, as first portrayed so perfectly, logically fits him.

"Arrowsmith" is the story of an individual, an analysis of the spirit that animates the investigator and drives him perhaps more strongly than any other motive in life, unless it be passion or hunger. It is told as only our leading realistic novelist can tell about things for which he feels real interest. It is told with that fire of the crusader which makes sentences burn and imbues words with living flame. It can do scientific medicine nothing but good, for it will aid to make many persons comprehend who now do not understand, and to make many others seek further information, that they may comprehend the aims and progress of medicine more fully.

ANNUAL REPRINT OF THE REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR 1924. Cloth. Price, $1. Pp. 82. Chicago: American Medical Association, 1924.

This volume contains the reports that were authorized for publication by the Council on Pharmacy and Chemistry during 1924. Some of these reports have been published previously in THE JOURNAL, while others now appear for the first time. The greater number of reports included in this volume concern products which the Council found inadmissible to New and Nonofficial Remedies, and they present the precise reason why they were found unacceptable. Here are found reports on Aolan and Armour's Peptone Solution for Hypodermatic Use, two nonspecific protein preparations; Colodine and Colobromidine, two iodized fat preparations; Hoyt's Gluten Flakes; "P-O-4," and Pixalbol. Physicians who have been attracted by the propaganda for proprietary preparations which are not included in New and Nonofficial Remedies will find these reports most enlightening. A number of reports deal with products described in New and Nonofficial Remedies. A report on "Benzyl Compounds" brings out that the expectations for the usefulness of benzyl benzoate and other benzyl esters, which was based on reports of enthusiastic users, have not been fulfilled, and that these esters will probably be found of limited value. There are also reports on polyvalent pneumococcic serum, colon bacillus vaccine, gonococcus serum and gonococcus vaccine, explaining that these are omitted from the book because the accumulated evidence leads to the conclusion that they do not have the value that was at first attributed to them. The volume includes a preliminary report on the new intestinal antiseptic hexylresorcinol, which product has attracted much attention; a general report on anaphylaxis produced by thromboplastic substances, and a report on the therapeutic use of digitalis by G. Canby Robinson, Paul D. White, Cary Eggleston and Robert A. Hatcher, which was written at the solicitation of the Council. The annual Reports of the Council on Pharmacy and Chemistry should be in the library of every student of drug therapy; they merit the serious consideration of every physician on account of the information they contain and also for the insight they afford into the activities of one of the advisory councils of the American Medical Association.

THE ERRORS OF ACCOMMODATION AND REFRACTION OF THE EYE AND THEIR TREATMENT. A Handbook for Students. By Ernest Clarke, M.D., F.R.C.S., Consulting Surgeon to the Central London Ophthalmic Hospital. Fifth edition. Cloth. Price, $3.50. Pp. 251, with 99 illustrations. New York: William Wood & Co., 1924.

To paraphrase, "of the remaking of books, there is no end." It is unfortunate that a book, no matter how excellent in the beginning, that has outlived its usefulness, should be perpetuated by endless editions. In the present state of high specialization in ophthalmology, a textbook should be designed for either students and general practitioners, and as such should be kept within the very A B C's of the subject, or else for practicing ophthalmologists, for whom it should contain the last word. Books that are between these extremes, and unfortunately they are only too numerous, have no place today, for they neither advance the knowledge of the student, who never sees them, nor aid the ophthalmologist, to whom their context is a matter of daily routine. The book under consideration falls into this category. It is well written and well printed. The text is lucid and clear for the major part, but it is too advanced for the undergraduate student, is too elementary for the graduate student, and contains nothing that the graduate ophthalmologist does not know. The discussion of accommodation is not on the same high plane as the rest of the book and leaves much to be desired. Again, the arguments in favor of unequal contraction of the ciliary

muscle to overcome astigmatism are not conclusive in any sense, and the statements made in this connection lack proof. The chapter on eyestrain is carried to extremes that a reasoning ophthalmologist cannot agree with, although there is much sound common sense, based on the author's experience, mixed in. To noncognoscenti, it would be a rather difficult matter to separate the chaff from the wheat. The sections devoted to the heterophorias and the heterotropias are especially good and show sound judgment.

DIE SCHÄDIGUNGEN DER HAUT DURCH BERUF UND GEWERBLICHE ARBEIT. Herausgegeben von Dr. Karl Ullmann, Privatdozent an der Universität Wien, und Dr. J. H. Rille, Professor an der Universität Leipzig. Band I, Lieferung 1-8. Paper. Pp. 336, with illustrations. Leipsic: Leopold Voss, 1915, 1922.

The editors and their collaborators are succeeding admirably in their intention to cover the entire field of trade and occupational dermatoses. As is usual in collaborations, the work is somewhat uneven; but all chapters are satisfactorily treated. The chapter on the general etiology of occupational dermatoses by Blaschko, and the history of these dermatoses by Fischer, are especially interesting. One chapter is devoted to the skin changes in domestic beasts of burden. Some of the authors have illustrated their chapters by means of excellent photographs, whereas others, unfortunately, have made use of the photographs of moulages, a practice so common in Germany and Austria. The same, or at least what appear to be the same, moulages serve to illustrate every Teutonic textbook finding its way to this country. A moulage has a definite place in a museum, but a photograph of a moulage is a makeshift.

SURGICAL PATHOLOGY. By William Boyd, M.D., M.R.C.P., F.R.S.C., Professor of Pathology, University of Manitoba. Cloth. Price, $10 net. Pp. 837, with 362 illustrations. Philadelphia: W. B. Saunders Company, 1925.

The book falls into two parts, general and special pathology. The discussion of inflammation, tuberculosis, syphilis, tumors, thrombosis and embolism is good. The statement on page 150 that fat embolism probably is of little significance is open to question. The consideration of bacteriology and immunology is so fragmentary as to be of no value. The danger connected with the injections of foreign proteins is not emphasized. The statement on page 44 that the attempt to substitute the Jansky for the Moss blood classification has led to "a regrettable confusion which readily may prove disastrous to the patient" is hardly correct: the fact is that the Jansky grouping, being the prior one, was urged for acceptance in order to avoid the confusion already existing from the use then of the two groupings in different places. It is, indeed, doubtful whether Dreyer's work on defatted vaccines and tuberculin merits the attention it is given. In the second and larger part, the author discusses the morbid processes that he believes to be of special surgical interest. General diseases of the heart, lungs, liver, kidneys and certain other organs are not described. There is, of course, danger in this limitation, because the thought may arise that other changes than those described are not of much concern to the surgeon. For example, the description of syphilis of the liver is wholly inadequate, and yet large parts of the syphilitic liver have been removed by mistake because the pathologic anatomy of the condition was not recognized. Again, surgeons certainly have reason to be interested in typhoid ulcers, but no mention of them is made. No fault can be found with the teachings presented; they are conventionally safe, sound and down to date. The style tends to be diffuse. The illustrations are good almost without exception.

WERDEN UND WIRKEN EINES DEUTSCHEN FRAUENARZTES. Lebenserinnerungen. Von A. Martin. Cloth. Pp. 370. Berlin: S. Karger, 1924.

Dr. Martin was born in 1847. His career includes the usual intellectual education that is the privilege of the German student, and a long service in medicine, particularly devoted to gynecology, during which he traveled widely and became acquainted with practice throughout the world. Of particular interest to American readers will be his account of friendships with Howard Kelly, Charles S. Bacon and Ernst Cushing, and an extended trip through the United States in 1908. He has a keen sense of humor, and enlivens his account with many personal anecdotes. Of especial interest is his description of the annual session of the American Medical Association in Chicago in 1908. Here some sly fun is directed toward the receiving line, which is a feature of the presidents' receptions, and a conspicuous part of many official American social occasions.

MANUAL OF PSYCHIATRY FOR THE MEDICAL STUDENT AND GENERAL PRACTITIONER. By Paul E. Bowers, M.S., M.D., Examiner in Lunacy, State of California. Cloth. Price, $3.50 net. Pp. 365. Philadelphia: W. B. Saunders Company, 1924.

This book is intended to be a textbook of psychiatry, particularly intended, according to the preface by the author, for the student or practitioner of medicine who is not specializing in psychiatry. The attempt has been made, therefore, to condense the material and to avoid controversial discussions. The book is essentially an epitomized, condensed statement of mental disorders and examination and treatment, with some discussion of the relationship between psychiatric and social problems. Thus a chapter is devoted to the relationship of insanity to crime. Another chapter considers the Binet-Simon scale of intelligence tests. The process of condensation has perhaps been carried beyond practical limits. Because of an endeavor to present only well established facts in the briefest possible space, the reader unequipped with independent knowledge of the subject is left without some of the stabilizing considerations, and may infer facts when facts are hard to find. The scope of the book is rather wider than the treatment supports. It is unfortunate that the author with his large personal experience, especially in the field of behavior disorders, should have depended so much on others in the production of this volume and should have confined his own contribution to such narrow limits. The bibliography gives an indication of the careful consideration given to the literature, though it shows perhaps that too meager attention has been given to some of the more modern attainments in psychopathology.

TRAITÉ PRATIQUE D'ORTHOPÉDIE. Par Dr. G. Potel, Professeur a la Faculté de médecine de Lille. Paper. Price, 80 francs. Pp. 723, with 399 illustrations. Paris: Gaston Doin, 1925.

This is a fair review of the subject of orthopedic surgery. The author has not gone into all the methods of treatment, but has chosen those which he has found best. In the more important conditions he has indicated the bibliography of the most recent works, so that one may study more intensively certain operative procedures. Excluding congenital clubfoot and congenital dislocation of the hip, there is too much space allotted to the congenital deformities. The embryology as it concerns orthopedic surgery is not given sufficient space. The book is intended to be a practical outline of orthopedic surgery, and is of only moderate value to the student, practitioner or specialist. It is profusely illustrated, but the illustrations are only fair. Too many illustrations are borrowed, and the selection is not of the best. Excepting the work of Albee, American orthopedic surgery is given little attention.

CONCEALED TUBERCULOSIS OR "THE TIRED SICKNESS." A Clinical Study upon the Exhaustion Type of Hidden Tuberculosis Infections. By George Douglas Head, B.S., M.D. Cloth. Price, $2 net. Pp. 137, with illustrations. Philadelphia: P. Blakiston's Son & Co., 1924.

The author calls attention to the existence of concealed tuberculosis, which, he avers, is responsible for many obscure complaints characterized by symptoms of neurasthenia and by indefinite backache, pains in the chest, digestive derangement and general physical weakness. Also he stresses lack of endurance as a symptom that calls for a careful examination for concealed tuberculosis. Differentiation is made between concealed tuberculosis and syphilis, myocarditis, gastric and duodenal ulcer, and hyperthyroidism. The treatment laid down is, in the main, sound, although it would have been better if the author had made no reference to "forced feeding" and had been more explicit in his exercise prescriptions. Thirty illustrative cases are cited. The book brings out clearly a part of the problem of tuberculosis that is not usually understood by the average physician. Much of the book will be of use to the intelligent tuberculous patient.

Miscellany

ORGANOTHERAPY THEN AND NOW

JOHN RUHRÄH, M.D.
BALTIMORE

If Hercules were called on today to clean the Augean stables, he would provide himself with a capsule filler, a tablet machine and an ointment mixer, employ a good advertising agency, flood the mails of physicians, druggists, nurses and laymen with gorgeous and alluring write-ups of the therapeutic virtues of the excrementitious material of which he was to dispose, hire a good bootlegger, and live happy the rest of his days, just as they do in fairy stories and real life.

In days of old, the fact that many remedial agents were unpleasant led to the assumption that all obnoxious matter contained healing properties. This idea made a popular appeal, and the legacy of the knowledge of such agents left to the world by Egypt, Greece, Rome and Arabia increased like a rolling snowball until there were actually Dreckapothekers—dealers who specialized in filth. The first four issues of the London Pharmacopeia are filled with horrendous medicaments. After the roots and barks, herbs and flowers, fruits and resins we come to the Animalia. This section is to be earnestly commended to the modern maker of organic products. Whatever they do, they need hardly try to exceed this pharmacopeia. Here we find, among other things, scorpions, green frogs and what not, but think of the therapeutic virtues of Catus senex emasculatus. Then follow the animal parts and the excrements; human skull, the lungs of wolves, bears, lambs and frogs; four kinds of liver; twenty-three different animal fats; brains; hairs; feces from eleven different animals, including man; urine; saliva; sweat; mummy flesh, to say nothing of testes; kidney stones, blood and the like. The list is not as long as the modern ones, but it is more picturesque.

MEDIEVAL PRACTICE

Now let us see what was used in other days. Of necessity, the quotations must be brief.

Bagellardus, in 1472, in the first printed book on diseases of children, writes: "Now the judgment of many authorities is that an emerald suspended on the neck removes epilepsy. The judgment of all authorities is that peony suspended in some way or other on the neck, either the seed or the root, removes epilepsy. And this is true and is approved. In a like manner, some authorities assert that if one were to burn a prickly pig or hedgehog and give some of the dust to drink, it suddenly removes the epilepsy."

Writing in 1923, Dr. X, whom I will not name, as it would only mean an advertisement, advised "a lymph compound injected twice a week." Later on we learn that this compound is "orchitic fluids, extracts from lymphatic glands, spinal cord and brain." Every day in addition, the patient is to take thyroid extract.

Another book says: "According to Sajous, the principle in the treatment of epilepsy is to activate the catabolism of spasmogenic wastes through the adrenal system. Thyroid is a stimulator of adrenal activity, etc."

In 1473, Metlinger gave the following suggestion to increase the flow of milk: "She should also eat the udder or bag of goats and sheep that have given milk." Thomas Phaer, in 1545, in his "Boke of Chyldren" says, among other things: "The pouder of earthwormes dryed and dronken in a broth of a neates tongue, is a singular experiment for the same intent."

The modernists have just about caught up with this idea. The present teaching of the venders of glands and of some physicians is that placental extract, given either alone or with corpus lutein, mammary gland extract or pituitary extract, has the effect of a galactogogue. The use of placenta substance is based on Hammett's work, which needs careful repetition. Now Hammett claimed that it acts only during the establishment of lactation, that is, the first few days after the birth of the child, and he specifically states that it has no influence on lactation later on. There must be an enormous profit in selling placenta tablets to mothers with a deficient milk supply, as a large proportion of American mothers are afflicted by this evidence of overcivilization—or, shall we say, the lack of it?

If space permitted, many interesting analogies of ancient, medieval and modern practice could be cited; but since it does not, let us look for a moment at some of the vagaries of present-day advertisers.

VAGARIES OF THE PRESENT DAY

For senile dementia: Whole pituitary, thymus, thyroid, glycerophosphate of calcium and sodium together with Ext. [?] lymphatic glands, testes, brain and spinal cord and a few other drugs. These agents will apparently cure almost everything, but are especially recommended for disturbances [kind not stated] of adolescence, dementia praecox, loss of memory, lack of cerebral development in children, epilepsy, all forms of fundamental deterioration, idiocy and imbecility. The second combination is recommended three times a day in infantile paralysis, while the first cures paralysis agitans, and by some curious coincidence syringomyelia.

Printing and postage cost money, so some must recommend and buy, and presumably reputable pharmacists traffic in these nostrums. The credulity of the human animal passes all understanding!

The human body functions mysteriously. Those who have studied its workings assiduously are the most cautious in interfering with its action by putting into it substances whose effects they little understand. But "Fools rush in where angels fear to tread."

In a case of thyroid deficiency, the proper dosage can be determined only by the observations of a skilled clinician; and what is the right dose today may be the wrong dose tomorrow. A true physician knows his limitations. But read the literature that comes in every mail and from every part of the country. A man who may actually have the degree of doctor of medicine sits in his swivel chair and tells with unfailing accuracy (so he says) just exactly the number of grains or quarter of grains of suprarenal or testes or pituitary or what not that will infallibly render John Jones, who dwells in a distant city and suffers from lack of energy and low blood pressure, a healthy, potent male. The same man, and there are many of his ilk, will tell you just how much mammary gland, ovary or placenta Mrs. Jane Doe must take to have a plentiful secretion of milk or to relieve the manifold symptoms incident to her menopause. This wizardry rivals that of the late Dr. Abrams of electronic fame; nay, it excels it, for the late lamented made a pretense of an examination, while these supertherapeutists apparently need none at all. For every symptom there is a gland or a mixture of glands or a dried organ that will afford relief; not immediate relief, it is true, for that would kill the goose that lays the golden egg, but if used assiduously at so many dollars a box a cure must follow as the night the day.

Before long, as in the days of old, each symptom will have its numbered specific, an intermediary such as a physician will not be needed; and what is now sold to gullible doctors ere long will be sold to a gullible public. Little books of homeopathic specifics used to be printed for gratuitous distribution to a drug-loving populace. They may still be passed around for aught I know, and so I wait with consuming

interest the first list of symptoms and organotherapeutic specifics.

Every disease in the dictionary, from abscesses to zona, may be eradicated by this or that organ administered in varying proportions, the which a generously minded manufacturer is only too willing to inform the medical man. The type of facial paralysis known as Bell's palsy may be cured by giving certain mixtures for six weeks, and a recurrence prevented by giving another mixture for three months!

Has one the effrontery to laugh at the administration of part of an emasculated senile cat or the hairs from the pudenda of a certified virgin? If so, one may have a good laugh with almost every mail. I await these circulars with the same secret thrill with which I await my copy of *Le Rire* from Paris. I am sure of at least one joke and a good one.

TREATMENT OF EPILEPSY

When I read that epilepsy and idiocy and imbecility and backwardness of all sorts may be cured, and permanently if the patient will only continue to take these mysterious mixtures, I wonder at the obtuseness, the more than criminal apathy with which the American public allows thousands on thousands of epileptics and feebleminded to crowd the institutions maintained out of the public purse. Even if it costs more to provide each sufferer with a lifetime supply of slaughterhouse refuse, does not the heart of humanity demand it? This obvious neglect and perverse cruelty on the part of an otherwise generous and sentimental public strangely stirs me and perhaps, in immortal words, "There's a reason."

If anyone in the medical profession believes that epilepsy dependent on organic brain lesions can be cured by giving pituitary or any other gland or tissue, he is a fool; and if he does not believe it and administers such things, he is a knave. Epilepsy, as every physician knows, varies greatly, and many patients have long periods of freedom from attacks; for this reason, reports by those who confuse *post hoc* with *propter hoc* will continue to be made, but the manner of proof is obvious. Let any manufacturer or a group of them take a carload of their vaunted glands to the Craig Colony and give every patient the dosage recommended by the swivel chair supertherapeutist. If they close the Craig Colony and send all the patients home cured, I will write an article as long as this proclaiming my ignorance and error; nay, I will do it if 50 or even 5 per cent. are cured. Certainly there must be some philanthropic pituitariphobes who will serve humanity thus. He or they, if a group, will go down in history along with Lister and Pasteur, with Ehrlich and Curie and the other great benefactors of the human race. And think of the κῦδος, the reward, the advertising! Glandular therapy would be intrenched so securely that only the trumpet of Gabriel would put an end to it.

THE OUTCOME

As it is managed, the business must sooner or later fail, unless it ceases to cater to physicians and proceeds to humbug the public. What will survive will be a few tried and known therapeutic agents, just as digitalis and atropin and iron and iodin and the others came out of the pharmacopeias of an age that is just passing. Because thyroid and ovarian extract, epinephrin and pituitary extract and some other preparations are useful, it does not follow that every conceivable tissue, in minute doses and varying combinations given by mouth, will be followed by beneficient changes in an organism that the wisest physician would not be dogmatic about.

The wizardry of these supertherapeutists is, I repeat, a marvel exceeded by only one thing, and that is their effrontery. They will never have to manufacture extracts of fel bovis for home use.

To attack them is useless. They turn criticism into propaganda for their own good. The only way to get rid of this abuse, this stench in practice, is to employ the method used by Heberden when he laughed the excrementitious and the absurd out of the British Pharmacopeia. Perhaps another Heberden will arise in this age and laugh these nostrums out of the reputable part of the profession of medicine. Let us devoutly hope so, at any rate.

11 East Chase Street.

Medicolegal

Mandamus—Explanation of Refusal to License Insufficient

(Wilson v. Michigan State Board of Registration in Medicine (Mich.), 199 N. W. R. 643)

The Supreme Court of Michigan, in granting the petition of the plaintiff for a writ of mandamus after he had been refused registration by the defendant board, says that there should be at this time no doubt about the proposition that this court does not sit as a general reviewing body of the actions of the numerous boards created to examine applicants for licenses to follow the various professions and callings. To such boards is, and must be, committed the exercise of a sound discretion; but to them is not committed the exercise of an arbitrary will. They may exercise their discretion, but it must be exercised on the facts before them. In the answer in the instant case the defendant abstained from giving the court any reason for its action, any facts on which it was based, if any facts were before it. In effect it had replied to this court's order to show cause that it had exercised its discretion, and it was no concern of the court what prompted it so to do. Instead of stating facts from which this court could reach a legal conclusion that it had exercised its discretion, it only stated such legal conclusion without any facts on which to base it. Facts should be stated, not conclusions. If such an answer is sufficient to this court's order to show cause, then the actions of such boards possessed of discretionary power are immune from judicial inquiry. All that they would be required to say is that they have used their discretion, without giving any reason for their decision or stating any facts as the basis of their finding; they could register or refuse to register without giving any reason at all for their action; they could at will register one applicant and reject another possessed of the same qualifications. Indeed, that was what was done in the instant case. This is not the exercise of discretion, but of arbitrary will. Had the defendant submitted to this court facts before it, if any facts were before it, which formed a basis for the exercise of an honest judgment, had it given to this court substantial reasons which prompted its action, this court would be very loath to disturb its conclusion; but this court must dispose of the case on the pleadings before it, and on such pleadings it is constrained to hold that the defendant had not by its answer shown cause why the writ should not issue.

State University Hospital as a Charity—Liability

(Robinson v. Washtenaw Circuit Judge (Mich.), 199 N. W. R. 618)

The Supreme Court of Michigan says that Mr. and Mrs. Robinson each commenced an action in tort against a physician and the Regents of the University of Michigan to recover damages alleged to have resulted from the physician negligently leaving a sponge in the wound after an abdominal operation on Mrs. Robinson at the University hospital. In the present cases they asked for writs of mandamus to compel the defendant judge to set aside his orders dismissing their declarations against the regents in their actions for damages; but they were denied the writs. Their counsel pointed out that the actions for damages were not brought "against the hospital of the University of Michigan, but against the Regents of the University of Michigan," and urged that the question was disposed of by the provision of Section 1159 of the Compiled Laws of Michigan of 1915, providing that "the

Board of Regents shall constitute the body corporate, with the right as such of suing and being sued," contending that the regents were in no sense an eleemosynary institution entitled to be excepted from the general rule that a corporation is liable for the torts of its agents. But counsel for the regents urged that no cause of action was stated against the regents, because the university hospital, maintained under their direction in connection with its medical department, was a charitable institution. To the court it seems clear that the general superintendence of the university and direction and control of all expenditures from its funds is a governmental activity, and the board of regents a state agency to carry out the will of the people as expressed in the constitution, in regard to the educational institution committed to its care and supervision. Moreover, special laws of charitable import have been passed from time to time, such as providing for admission to the hospital and free treatment of indigent persons and others; for admission of indigent children afflicted with curable deformity or chronic diseases, with both medical and surgical treatment, board, lodging and nursing free of charge; for maintenance of said hospital in operation during the summer vacations of the university, etc., all of which gives that adjunct of the medical department of the university the character of a public charitable hospital. So far as this court discovers, the authorities are practically all to the effect that charitable or eleemosynary institutions supported wholly or in part by a state or a municipality are not liable for personal injuries suffered through the negligence of an employee, servant or agent of the institution. The fact that the regents as a public body corporate had the right of suing and being sued in a proper case involving property rights based on contract relations was immaterial here.

Depositions in Proceedings for Revocation of Licenses

(State ex rel. Farber v. Shot et al. (Mo.), 263 S. W. R. 804)

The Supreme Court of Missouri says that written charges against the relator were filed before the state board of health, which was asked to revoke his license to practice medicine and surgery. The board fixed a time to hear the charges, and caused notice and a copy of the charges to be served on the relator. On the day named, the board began the examination of the charges, but continued the hearing to a later date for the purpose of procuring depositions, and thereafter respondent Shot issued a notary's subpena requiring a named person to appear and testify in the cause pending before the state board of health. It was to stop the taking of this testimony that a writ of prohibition was sought in this action, it being contended that, since the state board could not issue a subpena or other process for the involuntary witnesses desired in an investigation before it, a notary public had no power to take the evidence of such witnesses by compulsory process and return such evidence to the state board. But the court holds otherwise, and that the writ should be denied as to the notary public.

The granting and revoking of such licenses are proper subjects of regulation under the police power of the state. In the exercise of that power the lawmakers had the right to vest in the state board of health the power to investigate and license physicians and to investigate charges against licensed physicians, and in proper cases to revoke such licenses. Section 7336 of the Revised Statutes of Missouri of 1919 not only empowers this board to hear and determine the charges, but says that it may consider depositions in the course of such hearing. Not only so, but it specifically provides that testimony for the use of the board may be taken by deposition "under the same rules and practice as is now provided for the taking of depositions in civil cases." That does not mean that there must be a cause pending in a court. It must be conceded that this board is not a court, and that the hearing before it is not a judicial trial; but it does not follow from this that the lawmakers may not provide that evidence may be taken and heard before a body of the character involved here. The statute means that charges pending before the state board of health have, so far as the right to take depositions is concerned, the same status as a cause pending in a court. The legislature could have granted the board the power to procure evidence by compulsory process. Instead, however, of giving the board the express power to summon witnesses and hear the evidence orally, it was provided that voluntary witnesses might be heard, and their evidence taken and transcribed, and other evidence could be heard by way of depositions; so that when there are pending before the state board of health charges against a physician, and the physician has been given notice thereof, as in this case, then the pendency of such charges authorizes a notary public to take testimony by depositions, just as such notary public is authorized to take testimony in a case pending in a court.

The court does not agree with the relator's contention that although the statute fixes the grounds on which a license can be revoked, if the charges pending before the state board are not of the statutory character, as it was alleged they were not in this case, the pending charges are insufficient in law to invoke the action of the state board, and hence there is no legal action pending on which evidence in deposition form can be taken. To the contrary, the court holds that, in this case, as long as there were charges pending, the right to take depositions existed. It is the pendency, and not the character and sufficiency, of the charges, which determines the right to take depositions.

Society Proceedings

COMING MEETINGS

Alabama, Medical Association of the State of, Birmingham, April 21-24. Dr. D. L. Cannon, 519 Dexter Avenue, Montgomery, Acting Secretary.

American Association of Anatomists, Cleveland, April 9-11. Dr. Lewis H. Weed, Johns Hopkins Medical School, Baltimore, Secretary.

American Association of Genito-Urinary Surgeons, Washington, D. C., May 4-6. Dr. Henry G. Bugbee, 40 East 41st St., New York, Sec'y.

American Climatological and Clinical Association, Washington, D. C., May 4-5. Dr. Arthur K. Stone, Framingham Center, Mass., Secretary.

American Dermatological Association, Washington, D. C., May 4-6. Dr. Udo J. Wile, 9 Geddes Heights, Ann Arbor, Mich., Secretary.

American Gynecological Society, Washington, D. C., May 4-6. Dr. Arthur H. Curtis, 104 South Michigan Avenue, Chicago, Secretary.

American Laryngological Association, Washington, D. C., May 4-6. Dr. George M. Coates, 1811 Spruce Street, Philadelphia, Secretary.

American Neurological Association, Washington, D. C., May 5-6. Dr. Frederick Tilney, 870 Madison Avenue, New York, Secretary.

American Ophthalmological Society, Washington, D. C., May 5-6. Dr. T. B. Holloway, 1819 Chestnut Street, Philadelphia, Secretary.

American Orthopedic Association, Washington, D. C., May 5-6. Dr. DeForest P. Willard, 1630 Spruce Street, Philadelphia, Secretary.

American Otological Society, Washington, D. C., May 4-5. Dr. T. J. Harris, 104 East 40th Street, New York, Secretary.

American Pediatric Society, Washington, D. C., May 4-6. Dr. H. C. Carpenter, 1805 Spruce Street, Philadelphia, Secretary.

American Society of Clinical Investigation, Washington, D. C., May 4. Dr. J. H. Austin, University of Pennsylvania, Philadelphia, Secretary.

American Society of Tropical Medicine, Washington, D. C., May 5-6. Dr. B. H. Ransom, P. O. Box 131, Pennsylvania Avenue Station, Washington, D. C., Secretary.

American Surgical Association, Washington, D. C., May 4-6. Dr. Robert B. Greenough, 8 Marlborough Street, Boston, Secretary.

Arizona Medical Association, Bisbee, April 16-18. Dr. D. F. Harbridge, Goodrich Building, Phoenix, Secretary.

Association of American Physicians, Washington, D. C., May 5-7. Dr. Thomas McCrae, 1929 Spruce Street, Philadelphia, Secretary.

Congress of Physicians and Surgeons of North America, Washington, D. C., May 5-6. Dr. W. R. Steiner, 646 Asylum Avenue, Hartford, Conn., Secretary.

Hawaii, Medical Society of, Honolulu, April 24-27. Dr. Forest J. Pinkerton, 43-46 Young Building, Honolulu, Secretary.

Kansas Medical Society, Topeka, May 5-7. Dr. J. F. Hassig, 804 Elks Building, Kansas City, Secretary.

Louisiana State Medical Society, New Orleans, April 21-23. Dr. P. T. Talbot, 1551 Canal Street, New Orleans, Secretary.

Maryland, Medical and Chirurgical Faculty of, Baltimore, April 28-30. Dr. J. A. Chatard, 1211 Cathedral Street, Baltimore, Secretary.

Minnesota State Medical Association, Minneapolis, April 27-29. Dr. E. A. Meyerding, 717 Commerce Building, St. Paul, Secretary.

Missouri State Medical Association, Kansas City, May 5-7. Dr. E. J. Goodwin, 901 Missouri Theatre Building, St. Louis, Secretary.

North Carolina, Medical Society of the State of, Pinehurst, April 28-30. Dr. L. B. McBrayer, Southern Pines, Secretary.

Ohio State Medical Association, Columbus, May 5-7. Mr. Don K. Martin, 131 East State Street, Columbus, Executive Secretary.

South Carolina Medical Association, Spartanburg, April 21-23. Dr. E. A. Hines, Seneca, Secretary.

Tennessee State Medical Association, Nashville, April 14-16. Dr. J. F. Gallagher, Jackson Building, Nashville, Secretary.

Texas, State Medical Association of, Austin, May 5-7. Dr. Holman Taylor, 207½ West 11th Street, Fort Worth, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL for a period of three days. No foreign journals are available prior to 1920, nor domestic prior to 1923. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested).

Titles marked with an asterisk (*) are abstracted below.

American Journal of the Medical Sciences, Philadelphia

169: 1-156 (Jan.) 1925

*Injuries to Musculospiral Nerve. W. R. MacAusland and A. R. MacAusland, Boston.—p. 1.
*Rapid Method for Determination of Gastric Acidity by Means of Test Papers. W. Denis and D. N. Silverman, New Orleans.—p. 25.
*Pernicious Anemia in Its Relationship to Sprue. E. J. Wood, Washington, D. C.—p. 28.
*Observations After Ten Years on Series of Cerebrospinal Syphilitics Treated by Intravenous and Intraspinal Therapy. G. Draper, New York.—p. 39.
*Volume and Composition of Blood in Addison's Disease. G. E. Brown and G. M. Roth, Rochester, Minn.—p. 47.
*Leukocytic Picture in Catarrhal Jaundice (Cholangeitis). E. Thewlis and W. S. Middleton, Madison, Wis.—p. 59.
*Influence of Emotional Reactions on Basal Metabolism. L. H. Ziegler and B. S. Levine, Waukesha, Wis.—p. 68.
*Electrocardiogram in Uremia and Severe Chronic Nephritis with Nitrogen Retention. J. E. Wood, Jr., and P. D. White, Boston.—p. 76.
*Vascular Changes of Kidney in Hypertension. R. H. Jaffe, Chicago.—p. 88.
Pitfalls in Diagnosis of Diabetes. H. J. John, Cleveland.—p. 102.
Relation of Tethelin to Pituitary Extract. Two Cases of Diabetes Insipidus. L. Berman, New York.—p. 111.
*Gastro-Intestinal Ulceration Following Cutaneous Burns. E. Novak, Baltimore.—p. 119.

Injuries to Musculospiral Nerve.—The MacAuslands report five cases of injury to the musculospiral nerve, and review the literature. It appears that a perfect result may be expected in cases of immediate suture of the nerve. While intervention in cases of old standing has given good results, the chances of success are lessened after the lapse of a period of paralysis. Simple freeing of the nerve is very often the only procedure necessary to relieve the condition. In cases of complete division of the nerve or in cases in which there is need to excise a portion of it because of a fibrous formation, nerve suture has been found the most satisfactory procedure for the approximation of the nerve ends. If the nerve suture does not relieve the condition, or if the case is not reparable by the various methods of manual stretching, neurotomy or nerve grafting, then tendon transplantation gives satisfactory results. After severance of a nerve, healing begins spontaneously. In cases of nerve suture, function develops in the same manner as in spontaneous healing. After secondary suture, sensibility returns early. Muscle control usually appears in the course of from two to four months, and is complete in from six to nine months, depending on the location of the nerve injury.

Determining Gastric Acidity by Test Papers.—Denis and Silverman make use of papers prepared from two different dyes, thymol blue for the range from p_H 3.0 to p_H 2.0, and dimethylaminoazobenzol (Töpfer's reagent) for the range from p_H 2.0 to p_H 1.0 to determine gastric acidity. The results obtained by the papers and by the electrometric method are astonishingly close.

Pernicious Anemia and Sprue.—Wood asserts that as readily in pernicious anemia as in sprue, *Monilia psilosis* can be recovered from the feces, the gastric contents and the gums, when pyorrhea exists. By feeding guinea-pigs with *Monilia psilosis*, a hemolytic anemia was produced. There were also produced changes in the liver and bone marrow which were suggestive of the action of a hemolytic poison. A filtrate of *Monilia psilosis* in dextrose water, injected intravenously into rabbits, caused blood changes apparently hemolytic in nature.

Therapy of Cerebrospinal Syphilis.—Forty-five cases have been followed by Draper to note the results of intravenous and intraspinal therapy. Twenty-five of these cases date back ten years. It would seem that the Swift-Ellis method of treatment undoubtedly is very effective in a certain type of case, representing, according to this small but varied series, about 36 per cent. of all cases of cerebrospinal, or central nervous syphilis. Successful results of the treatment of cerebrospinal syphilis do not depend alone on the spirocheticidal effect of arsphenamin and mercury; there is undoubtedly some other factor developed in the course of the treatment that sucessfully raises the resistance. When this resistance elevator fails to develop, no amount or intensity of treatment with arsphenamin, serum and mercury can check the destructive advance of the disease. In view of the tendency to recrudescence, Draper insists that all apparently cured patients should be instructed to report for physical examination and spinal fluid test every two years and possibly oftener.

Blood in Addison's Disease.—These studies by Brown and Roth were made in seventeen cases of Addison's disease. Anemia is the exception rather than the rule in Addison's disease, having occurred in only slight degree in 37 per cent. of the cases in this series. In only one instance was marked anemia found. A mild or questionable anemia was found in four cases (23 per cent.). In three of five cases, the cell-volume index was decreased, and in three the saturation index was increased, indicating small erythrocytes with high hemoglobin content. A relatively high lymphocytosis was present in the majority of cases. According to the dye method, normal circulating blood plasma volumes, or simple normovolemias, were found in all but one case. Decreased percentages of water and of blood plasma were obserevd in one case during the period of acute suprarenal insufficiency. Anemia, when associated with Addison's disease, is apparently not due to a dilution, or an increase, in total blood volume, since large blood volumes did not exist in the presence of anemia. Anemia was not masked by contraction of volume, since normal blood volume existed in all cases in which hemoglobin values were normal. Repeated volume determinations in three cases revealed marked fluctuation in cell and plasma volumes in two. The volume fluctuation masked only in a minor degree the percentage hemoglobin changes, since the normal cell-plasma-volume ratios were closely maintained.

Leukocytes in Catarrhal Jaundice.—Leukocyte counts, total and differential, were made by Thewlis and Middleton in thirty-eight cases of acute catarrhal jaundice. Notable among the findings in this relation are the leukopenia, the absolute decrease in all the component leukocytes except the large mononuclear cells, and the appearance of unusual lymphocytic forms, especially the lymphoblast. Preliminary studies indicate that the fall in polymorphonuclear neutrophils results from inhibition rather than paralysis of the leukogenic function. The suggestion of a continued hemoclastic shock in explanation of the observed leukopenia in the presence of a known hepatic lesion has not been fruitful. From a practical standpoint these data should serve as important diagnostic criteria. Prognosis in catarrhal jaundice may be guided by the degree of the leukopenia and the trend of the leukocytic curve. The degree of leukocytic depression is frequently in direct ratio to the severity of the underlying condition. Furthermore, the lowering of resistance incident to a decrease in the leukocytes in catarrhal cholangeitis must emphasize the need for the protection of such individuals from exposure to infectious disease, until a normal leukocytic level has been reestablished.

Effect of Emotions on Basal Metabolism.—Ziegler and Levine found that the basal metabolism rate is increased in psychoneurotic patients without goiter when they think about an emotion-producing aspect of their past history. Most frequent objective responses to emotion-producing stimuli were small changes in color of the skin, slight change in rate and amplitude of respiration, and very fine tremors. Some patients who showed increase in metabolism rate and practically no objective reactions were not aware of any emotions whatever.

Electrocardiogram in Uremia and Chronic Nephritis.—In some of the thirty-eight cases of uremia and severe chronic nephritis with increased blood nitrogen studied by Wood and

White, there was a toxic effect, acting in some respects like digitalis on the heart muscle. It may produce abnormal electrocardiograms: changes in the T wave of Lead II, less often abnormal rhythm, and rarely an increase in the auriculoventricular conduction interval, or in the duration of the Q-R-S complex.

Changes in Kidney in Hypertension.—On the basis of microscopic findings noted in kidneys in cases of early hypertension, Jaffe suggests that the primary renal lesion should be sought in the tufts of the glomeruli. The fatal spasms occur in these. They result in a sudden interruption of the glomerular circulation and in an increase of the pressure in the adherent arterioles. The increased pressure distends the arteriolar wall. This is the first change remaining visible after death. Later, the tufts, too, show signs of the harmful irritation. Their blood content becomes irregular. The capillary walls appear to be thickened, and undergo hyaline degeneration (capillary sclerosis). The afferent arterioles are not exposed to the rise of the pressuure in their lumen, but irritating matter of endogeneous or exogeneous origin will also accumulate in that part of the arteriál system, and act most intensively on its walls. As a result of this direct toxic injury to the arteries, there is found in the later stages proliferation of the intima, and hyaline and lopoid degeneration. The differences in the extent of the degenerative changes can readily be explained by the different quality and intensity of the injurious agent.

Gastro-Intestinal Ulceration Following Skin Burns.—In the case reported by Novak, death supervened on the tenth day after the accident, without any gastro-intestinal symptoms having been noted, except vomiting. At the necropsy, multiple small ulcers were found in the stomach near the pylorus, and nowhere else. Acute nephritis also was present.

American Journal of Roentgenology and Radium Therapy, New York

13: 1-104 (Jan.) 1925

*Roentgenologic Aspects of Brain Tumors; Meningiomas. M. C. Sosman and T. J. Putnam, Boston.—p. 1.
Clinical Importance of Chronic Changes in Appendix. F. W. White, Boston.—p. 12.
Effect of Bronchostenosis on Roentgen Ray Shadows in Carcinoma of Bronchus. R. Golden, New York City.—p. 21.
*Surgical Treatment of Roentgen Ray Lesions. C. A. Porter, Boston.—p. 31.
Delayed or Remote Appearance of Roentgen Ray Burns After Long Periods of Latency. R. Matas, New Orleans.—p. 37.
Electrocoagulation or Desiccation in Treatment of Keratoses and Malignant Degeneration Which Follow Radiodermatitis. G. E. Pfahler, Philadelphia.—p. 41.
*Results of Roentgen Ray Therapy on Brain Tumors. P. Bailey, Boston. —p. 48.
*Immediate Metabolic Disturbances Following Deep Roentgen Ray Therapy. H. P. Doub, A. Bolliger and F. W. Hartman, Detroit.—p. 54.
Physical Standards of Protection Against Roentgen Ray Dangers. A. Mutscheller, New York City.—p. 65.

Roentgen-Ray Findings of Meningiomas.—The roentgenologic findings in a group of ninety-five verified intracranial meningiomas have been reviewed by Sosman and Putnam. Of these, forty-seven, or 49.3 per cent., showed recognizable changes characteristic of the tumor. The bony changes which are considered characteristic are: (1) Erosion and vascularity; (2) osteoma formation; (3) spicule formation; (4) diffuse thickening, and (5) enlargement of the meningeal channels. A sixth manifestation is the calcification of the tumor itself, which is probably a regressive change. These changes are most frequently and clearly seen in meningiomas of the vault. A brief review of their comparative incidence, pathology, and classification is also given.

Surgical Treatment of Roentgen-Ray Burns.—Porter says that in ordinary malignant disease, to get rid of both the local lesion and the glands will cure the disease; but in these roentgen-ray cases the guardian glands should be preserved as long as possible for they are very often simply enlarged from adenitis and to a certain extent prevent the metastasis of cells to the rest of the body.

Results of Roentgen-Ray Therapy on Brain Tumors.—Of 242 patients who have received roentgen-ray treatment for brain tumor at the Peter Bent Brigham Hospital, fifty-nine have been followed throughout their course in the clinic, and have received at least six treatments, which is, Bailey says, considered sufficient to judge whether the treatment will be of benefit to them. Apparently roentgen-ray therapy offers little hope of amelioration in cases of meningioma, acoustic neuroma, and tumors of Rathke's pouch. Pituitary adenomas respond well to roentgen-ray treatment, but this treatment is not altogether without danger, and the visual fields should be followed carefully while treatment is in progress. Tumors of the brain substance, usually called "gliomata," sometimes are very much improved by roentgen-ray therapy and sometimes do not respond at all. The reasons for this variability are not well understood, but every such tumor should be subjected to treatment (after an attempt has been made to remove it, where this attempt is thought advisable) and often good results may be obtained in apparently hopeless cases.

Metabolic Disturbances Following Deep Roentgen-Ray Therapy.—Observations on the human and on dogs were made by Doub and his associates to determine the nature of the metabolic disturbances that follow deep therapy. They believe that the phosphorus content of the blood in both patients and dogs has a definite relation to the dosage of roentgen rays and the tissue irradiated. The large increases in phosphorus and decreases of amino-acids and nonprotein nitrogen during the first hour following irradiation indicates a maximum initial effect on the cell nucleus. An early distinct alkalosis of the blood is probably brought about by nuclear destruction yielding purine bases. The organism after moderate dosage rapidly returns to normal from this stage with a compensating mild acidosis in twenty-four hours. This acidosis usually protects the organism against any untoward effects after the second or subsequent treatments. Very heavy dosage or irradiation of large tumor masses is followed by gradually intensified alkalosis with lethal termination. Here there is a secondary salt action with widespread cellular destruction of both nucleus and protoplasm, accompanied by high nonprotein nitrogen, uric acid and guanidin content of the blood. The effects of irradiation are counteracted by substances which protect the cell; namely, ether anesthesia, morphin, glucose and calcium lactate.

Annals of Surgery, Philadelphia

81: 1-412 (Jan.) 1925

Early Days of Annals of Surgery. W. W. Keen, Philadelphia.—p. 1.
Masters of Surgery in Early Years of Annals of Surgery. W. J. Mayo, Rochester, Minn.—p. 3.
*Lupus in Its Surgical Aspects. W. S. Handley, London, England.—p. 9.
Spinal Anesthesia. R. Leriche, Strasbourg, Alsace.—p. 38.
*Pylorus Spasm and Its Surgical Treatment. R. Bastianelli, Rome, Italy. —p. 45.
*Antethoracic Esophagoplasty. T. Rovsing, Copenhagen, Denmark.—p. 52.
*So-Called Idiopathic Dilatation of Esophagus. P. N. Bull, Oslo, Norway. —p. 59.
*Tuberculosis of Kidney. M. Persson, Stockholm, Sweden.—p. 94.
*Aneurysm of Renal Artery: Two Cases. H. Schramm, Lwow, Poland. —p. 105.
*Latent Jaundice as Symptom of Biliary Colic. G. de Takats, Budapest, Hungary.—p. 108.
Some Fracture Calamities and Their Management. J. O'Conor, Buenos Aires, Argentina.—p. 111.
*Resection of Stomach by Kocher's Method. T. Aoyama, Tokyo, Japan. —p. 125.
Acute Pancreatitis. B. Moynihan, Leeds, Eng.—p. 132.
*Treatment of Chronic Recurrent Dislocation of Shoulder by Crucial Capsular Plication. W. L. Keller, Washington, D. C.—p. 143.
*Surgery of Juxtapyloric Ulcer. G. F. Cottle, U. S. Navy.—p. 149.
*Amputations in Industrial Surgery. W. L. Estes, Bethlehem, Pa.—p. 164.
Thoracic Surgery as Specialty. H. Lilienthal, New York.—p. 191.
*Gas Gangrene Treatment. J. T. Pilcher, Brooklyn.—p. 198.
Craniotomy Under Local Anesthesia. C. A. Elsberg, New York.—p. 213.
*Diagnosis and Localization of Spinal Cord Tumors. W. E. Dandy, Baltimore.—p. 223.
Spasmodic Torticollis. J. M. T. Finney and W. Hughson, Baltimore.—p. 255.
Practical Points in Connection with Goiter Surgery. A. J. Ochsner, Chicago.—p. 270.
*Experimental Transplantation of Diaphragm as Adjunct in Treatment of Lesions at Lower End of Esophagus. G. J. Heuer, W. D. W. Andrus and H. G. Bell, Cincinnati.—p. 273.
Surgery of Jaundice. J. B. Deaver, Philadelphia.—p. 287.
Jaundice: Its Pathologic Physiology. S. P. Reimann, Philadelphia.—p. 299.
Internal Biliary Fistula. E. S. Judd and V. G. Burden, Rochester, Minn. —p. 305.

Hour-Glass Stomach and Duodenum. C. H. Mayo, Rochester, Minn.—p. 313.
Diverticulitis of Colon. C. H. Peck, New York.—p. 322.
Postoperative Complications of Abdominal Operations. G. W. Crile, Cleveland.—p. 326.
Rational Treatment of Sliding Hernia. A. V. Moschcowitz, New York.—p. 330.
Some Unusual Growths in Region of Inguinal and Femoral Canals. J. S. Horsley, Richmond, Va.—p. 335.
*Pelvic Actinomycosis. W. M. Brickner, New York.—p. 343.
Theory and Treatment of Spiral Fractures. E. Rixford, San Francisco.—p. 368.
Abduction Treatment of Fracture of Neck of Femur. R. Whitman, New York.—p. 374.

Surgery of Lupus.—Handley asserts that lupus is not a skin disease. It is a disease of the lymphatic system not restricted to the skin, and governed as to its mode of spread by the facts of lymphatic anatomy. Tuberculous lupus presents all the marks of a disease spreading by continuity in the lymphatic vessels. It is in fact essentially and primarily a disease of the lymphatics, a destructive lymphangitis of the parietal lymphatic system. The treatment employed by Handley is based on this pathologic conception.

Surgery of Pylorospasm.—Four cases of pylorospasm are reported by Bastianelli in which accurate clinical study, and the roentgen-ray examination had led him to make a diagnosis of certain or probably duodenal ulcer, and in none of them was it found. He is convinced that this is a common occurrence but one which is rarely reported. Sphincterotomy according to Rammstedt was done in each case with good results.

Antethoracic Esophogoplasty.—Rovsing had devised an operation for treating an impervious esophagus which he terms an antethoracic esophagoplasty. He has performed the operation with success in two cases. Three other patients are still under treatment. A new esophagus is fashioned from the skin of the chest. From two parallel incisions, beginning above the jugulum, terminating underneath the gastrostomy, where they meet, the skin is dissected free inwardly so far that it can be united round a big rubber tube, and outwardly so far that the skin from the sides can be dragged together and united in the midline; later through an oblique incision along the anterior border of the sternocleidomastoideus. The esophagus is dissected free and lifted up to the incision of the skin. Between two clamps the esophagus is divided, the inferior end is then dragged out through a small incision in the left supraclavicular fossa, fixed to the skin by silk sutures and drained by a tight rubber drain. The oral end of the esophagus is united with the new formed antethoracic skin tube. After removal of the Pezzer drain from the previously made gastrostomy, the skin round this tube is united in continuity with the antethoracic skin gullet. This newly formed esophagus functions well.

Idiopathic Dilatation of Esophagus.—Bull reports five cases of so-called idiopathic dilatation of esophagus of which four have been treated by means of esophagogastrostomia subdiaphragmatica.

Tuberculosis of Kidney.—Persson reports a case of comparatively early renal tuberculosis, in which the removed kidney showed, in addition to the tuberculosis, unmistakable remains of a traumatic lesion of considerable extent. Four years previously the patient had been struck by a heavy stone across the upper part of the abdmoen. He felt such severe pain that he had to leave off working. In the evening of the same day the urine was heavily mixed with blood. During the night he had intense desire to micturate and also pain localized to the right side of the abdomen, just below the costal arch. He felt no pain in his back. The pain showed no tendency to radiate. The man was an invalid for four years. Finally the kidney was removed. It contained a large traumatic cyst in the upper pole and right next to it a tuberculous cavity. The second case was one of tuberculous kidney with duplication of the renal pelvis and ureter. In the lower segment of the kidney, there was an extensive and comparatively advanced tuberculous process, in the parenchyma as well as in the pelvis and ureter. The upper segment of the kidney presented only a few small macroscopic, tuberculous foci having a subcapsular location in the cortex, some microscopic tubercles of the same localization, some microscopic tubercles within a pyaramid situated one-half centimeter from the pelvic mucous membrane, but no tuberculous changes of any kind in the mucous membrane itself, or in the ureter, nor could any ulcerations of the papillae be demonstrated in these sites with the microscope.

Aneurysm of Renal Artery.—In one of the cases cited by Schramm death ensued as a result of rupture of an aneurysm of the renal artery. In the other case kidney and aneurysm were removed. The patient made a good permanent recovery.

Latent Jaundice Symptom of Biliary Colic.—In fifteen cases of biliary colic an increased amount of bilirubin was found by de Takats in the blood without the presence of manifest jaundice. This hyperbilirubinemia could be lowered in four instances out of five by the intravenous injection of 0.5 mg. atropin. The author believes that this fact might be explained by the relaxation of the muscles that regulate bile flow.

Resection of Stomach by Kocher's Method.—Aoyama has operated by Kocher's method in forty-two cases. Of these forty-two cases, five were concerned with ulcerous diseases, and the other thirty-seven cases with carcinoma of the stomach. No deaths occurred in cases of the benign diseases. In the cancerous disease death occurred in seven cases, a mortality of 19 per cent. In two of these seven fatal cases the transverse colon was resected at the same time. The deaths in both cases were caused through the faulty suture of the colon. If these two cases are excluded, the mortality is 14 per cent. In one of the five cases, peritonitis evidently occurred, but at the necropsy no sign of faulty suture was found. In another four cases the absence of peritonitis was confirmed at the necropsy. In these four cases the retention of ingesta was not remarked, and deaths occurred between two and ten days after the operation. In one of the cases of permanent cure, the resection was performed with the gastroduodenostomy followed by Kocher's method and at the same time the excision of the transverse colon en masse.

Treatment of Recurrent Dislocation of Shoulder.—The crucial capsular plication advocated by Keller produces a crucial band at the point of greatest weakness in the capsule and uniform capsular contraction to a degree that is not possible when the old method of vertical plication alone is resorted to. The transverse part of the plication shortens the capsule and overcomes the dropping of the head in a large proportion of cases where there is no impediment to its ascent.

Surgery of Juxtapyloric Ulcer.—In 1924 seventeen persons were operated on at the Naval Hospital, Brooklyn, N. Y., for juxtapyloric ulcer. All but two are apparently cured. One of these two now has active pulmonary tuberculosis and the other a neurasthenia. There were no deaths. Local anesthesia is considered by Cottle to be the anesthetic of choice, its limitations being mainly the experience of the operating surgeon in this type of anesthesia. Cottle says that a surgical cure of these cases should not be claimed unless the patient is relieved of pain and is sufficiently well to return to a gainful occupation on a reasonably unrestructed diet.

Amputations in Industrial Surgery.—Of 727 cases of single major amputations referred to by Estes, thirty-one patients died, a general mortality percentage of 4.26. There were double synchronous amputations with three deaths, a mortality rate of 6.5 per cent. There were three triple synchronous amputations and no deaths. Besides, there were eighteen cases of major amputation and some other operation of major importance done at the same time; these are called "mixed operations." There were three deaths. Rate 16.66 per cent. There were six cases of two amputations and some other major operations done at the same time; no deaths. There was one quadruple mixed operation; the patient recovered. All of the deaths except seven occurred within forty-eight hours from shock and exhaustion; seven patients were infected and died of septicemia. As far as reported, or of which any record could be obtained, nineteen patients had painful or diseased stumps (ulcerated stumps) and required reamputation.

Treatment of Gas Gangrene.—The following solution was employed by Pilcher and others in a series of one hundred severely infected cases which had been treated with surgical solution of chlorinated soda for ten days or longer without any appreciable signs of diminution in the local inflammatory condition or in the lessening of the bacterial flora present: quinin sulphate, 1 gm.; hydrochloric acid, 0.5 c.c.; glacial acetic acid (99 per cent.), 5 c.c.; sodium chlorid, 17.5 gm.; solution of formaldehyd, 1 c.c.; thymol, 0.25 gm.; alcohol (90 per cent.), 15 c.c.; aqua q. s. ad 1 liter, compounded by (1) dissolving the quinin in the hydrochloric and acetic acids; (2) dissolving the sodium chlorid in the water, and (3) dissolving the thymol in the alcohol. No. 1 is added to No. 2, then the formaldehyd, and finally the thymol solution.

Diagnosis of Spinal Cord Tumors.—Dandy asserts that a careful history and neurologic examination will be sufficient for both diagnosis and localization in over 90 per cent. of the cases of spinal cord tumor. By using air or an iodized fat (only when required) the diagnosis and localization can be made in the remaining 10 per cent. of these cases. Air is used to diagnose or eliminate a tumor when the neurologic examination is not adequate for this purpose, and also to localize a tumor when it is possible. Iodized fat is used for localization when a tumor is known to be present and when other means fail. The iodized fat can be removed at operation. Lumbar puncture alone is not a procedure of merit. The limited information it yields is overbalanced by the potentialities of serious harm. If used in conjunction with air or iodized fat the information obtained is greater than the possible injury. Any injurious effect from lumbar puncture can be corrected by immediately removing the tumor. Lumbar puncture is necessary for air injections. Ayer's cisternal puncture is far superior for the iodized fat test. The importance of a dry lumbar puncture tap is indicated in three cases, but there is danger of error in the interpretation of purely negative evidence. It is safer to use iodized fat when in doubt.

Transplantation of Diaphragm.—A two-stage operation for the resection within the abdomen of the lower end of the esophagus and the cardiac end of the stomach is suggested by Heuer et al. The first stage contemplates the transposition of the lower end of the esophagus into the abdomen through the transplantation upward of the left half of the diaphragm. The second stage includes the resection of the esophagus and an esophagogastrostomy. The transplantation upward of the left half of the diaphragm is a simple and reasonably safe procedure. It has been done twenty-eight times in dogs and once in the human being. The occurrence of diaphragmatic hernia in two instances in dogs suggests that this is the complication most likely to occur. Sufficient care in the placement of the sutures should avoid this complication. Whether the phrenic nerve to the transplanted diaphragm be divided or not, does not make any difference in the result. In the one instance the diaphragm remains immobile, occupies a high position, and eventually, through atrophy, is converted into a fibrous sheet. In the other instance the transplanted diaphragm moves normally, but less in amplitude, and its musculature remains intact. The formation of a new esophageal hiatus which will not constrict the esophagus, and at the same time not permit the development of diaphragmatic hernia, has proved to be most the difficult problem in connection with transplantation of the diaphragm. Esophagogastrostomy, performed within the abdomen through an intercostal incision, is said to be technically not difficult.

Pelvic Actinomycosis.—Brickner describes the surgical treatment, with recovery, of five consecutive cases of pelvic actinomycosis in which the disease lasted three, eleven, four, two, and twenty years, respectively. In one case the pelvic involvement was a late extension. In one case there were four outbreaks circumscribed to the groin with latent intervals of six to seven years.

Archives of Ophthalmology, New Rochelle, N. Y.

54: 1-110 (Jan.) 1925

Collective Study of Treatment of Congenital Hydrophthalmus. E. M. Blake, New Haven, Conn.—p. 1.
Nocardia (Streptothrix) Infections. F. E. Woodruff, St. Louis.—p. 11.
Pathogenesis of Glaucoma. F. H. Verhoeff, Boston.—p. 20.
Results of Turning of Tarsus. L. de Blaskovics, Budapest, Hungary.—p. 38.
Melanosis of Lids, Conjunctiva and Sclera, with Wartlike Growths on Iris. H. Friedenwald and J. S. Friedenwald, Baltimore.—p. 51.
Conservative Operative Treatment of Large Staphylomas of Cornea. R. E. Wright, Madras.—p. 55.
Melanosarcoma of Choroid Followed by Phthisis Bulbi and Iridocyclitis in Both Eyes: Case. M. Cohen, New York.—p. 58.
Inflammatory Swellings Simulating Dacryocystitis. J. Greer, Jr., St. Louis.—p. 68.

Atlantic Medical Journal, Harrisburg, Pa.

28: 265-332 (Feb.) 1925

Problems of Surgeon. G. M. Dorrance, Philadelphia.—p. 265.
Milk Control in Pennsylvania. C. H. Miner and R. E. Irwin, Harrisburg.—p. 267.
*Report of Large Number of Poliomyelitis Cases in Two Families. E. S. Everhart, Harrisburg and L. G. Cole, Blossburg.—p. 269.
Pneumonia as Principal and Contributory Cause of Mortality. W. R. Batt, Harrisburg.—p. 270.
Hemorrhages of Pregnancy. H. A. Miller, Pittsburgh.—p. 272.
Uterine Hemorrhage. J. O. Polak, Brooklyn.—p. 274.
Pathologic Eye Conditions Associated with Pregnancy. W. W. Blair, Pittsburgh.—p. 279.
Ocular Anomalies and Their Clinical Significance. W. S. Reese, Philadelphia.—p. 282.
*Sudden Onset of Symptoms in Brain Tumors. G. Wilson and N. W. Winkelman, Philadelphia.—p. 285.
Present Status of Appendicitis. G. W. Reese and G. G. Reese, Shamokin.—p. 290.
Acute Otitis Media. S. Cohen, Philadelphia.—p. 291.

Family Cases of Poliomyelitis.—In one family of six children, ranging in age from 2 to 11 years, 100 per cent. of the children developed the disease which, in the prodromal stage, had the identical symptoms to a greater or less degree. In another family of seven children, five were similarly affected. Everhart and Cole have not found in any report so large a number of family cases as occurred in these two families.

Glioma of Brain.—A review of the cases described by Wilson and Winkelman brings out several pertinent facts. First, that the type of tumor in all the cases proved to be glioma, a tumor which is infiltrating and does not in the beginning completely destroy the tissue which it invades. Usually the precipitation of symptoms is due to a hemorrhage within or around the tumor, but this rule is not universal, and in some cases a definite cause for the onset of the symptoms could be attributed to trauma or to alcoholic excesses. These cases show another important fact, viz., that once the symptoms are precipitated, the course then becomes brief and stormy with the fatal outcome not far away. These cases being for the most part gliomas, operation, if done, has but a palliative effect, and the patient soon succumbs to the rapidly increasing intracranial pressure. The authors caution that in any acute cerebral case, fluid should not be withdrawn from the spinal canal until a careful estimation of the pressure has been made. If the pressure is high and no evidence of meningitis is revealed by inspection of a few drops of the fluid withdrawn, a large amount should not be drained off.

Boston Medical and Surgical Journal

192: 287-334 (Feb. 12) 1925

Ethylene. L. F. Sise, Boston.—p. 287.
Therapeutic Uses of Parathyroid Gland. W. N. Berkeley, New York.—p. 296.
Epidemic Encephalitis (Hemiplegic Form). Case with Recovery. M. Bernstein, Philadelphia.—p. 298.
Vitamin Potency of Cod Liver Oil. XVI. Vitamin A Potency of Shad Body Oil.—p. 300.
Treatment of Some Common Skin Diseases of Face. W. J. MacDonald, Cambridge, Mass.—p. 302.
Report of 500 Consecutive Tonsillectomies in Their Relation to Coagulation of Blood and Hemorrhage. G. L. Richards, Fall River, Mass.—p. 304.
*Mesenteric Defects as Cause of Intestinal Obstruction. G. D. Cutler, Boston.—p. 305.

Mesenteric Defects as Cause of Intestinal Obstruction.—A case of intestinal obstruction in a child from strangulation of a loop of ileum through a mesenteric defect, with resection and recovery, is reported by Cutler. This is an unusual but not rare acute abdominal condition. It has not been recognized clinically from other forms of intestinal obstruction, and several times, because of associated fever, high pulse

rate and leukocytosis has been diagnosed acute appendicitis. Cutler says the apertures in the mesentery are probably in most instances of congenital origin, rarely the result of trauma. It is doubtful if inflammation plays any part in their formation. The significance of severe abdominal pain and vomiting with other signs of obstruction should be recognized early and the appropriate treatment applied, namely, laparotomy and reduction as soon as the diagnosis can be made. This form of obstruction produces marked strangulation, and gangrene supervenes rapidly. Early operation will increase the number of reductions and decrease the number of resections, thus lowering the mortality. In the severe cases with gangrenous intestine, a two stage operation, resection and drainage of the bowel first, then a later anastomosis, is recommended. Data concerning twenty-eight cases of mesenteric defect causing intestinal obstruction are given.

Indiana State Medical Association Journal, Ft. Wayne

18: 1-48 (Jan.) 1925

Bronchoscopy in Diagnosis and Treatment of Lung Suppuration. L. H. Clerf and R. M. Lukens, Philadelphia.—p. 1.
Iodin in Prevention and Treatment of Goiter. W. M. Boothby, Rochester, Minn.—p. 5.
Focal Infections from Accessory Sinuses. R. H. Skillern, Philadelphia. —p. 8.
Phantasy Life in Superior Children Produced by and Producing Conflicts. A. M. Muhl, San Diego, Calif.—p. 12.

Journal of Biological Chemistry, Baltimore

62: 557-851 (Jan.) 1925

Nitrogenous Groups of Plant Nucleic Acid. W. Jones and M. E. Perkins, Baltimore.—p. 557.
*Effect of Sodium Benzoate Ingestion on Composition of Blood and Urine; Posible Synthesis of Glycine in Body. W. W. Swanson, Minneapolis. —p. 565.
*Fat-Soluble Vitamins. XXI. Alleged Induction of Growth Promoting Properties in Air by Irradiation with Ultraviolet Light. E. M. Nelson and H. Steenbock, Madison, Wis.—p. 575.
Methemoglobin. J. B. Conant and L. F. Fieser, Cambridge, Mass.—p. 595.
Method for Determining Methemoglobin in Presence of Its Cleavage Products. J. B. Conant and L. F. Fieser, Cambridge, Mass.—p. 623.
Enzymatic Synthesis of Protein. II. Effect of Temperature on Synthesizing Action of Pepsin. H. Borsook and H. Wasteneys, Toronto, Canada.—p. 633.
Oxygen and Carbon Dioxid Contents of Arterial and Mixed Venous Blood in Normal Intact Dogs. H. J. Stewart, New York.—p. 641.
Liberation of Ammonia in Tryptic Digestion. A. Hunter and R. G. Smith, Toronto, Canada.—p. 649.
*Relative Proportions of Sodium, Potassium, Calcium and Magnesium in Blood Plasma in Renal Disease. I. M. Rabinowitch, Montreal.—p. 667.
Enzymatic Synthesis of Protein. III. Effect of Hydrogen Ion Concentration on Peptic Synthesis. H. Wasteneys and H. Borsook, Toronto, Canada.—p. 675.
Studies on Enzyme Action. XXIX. Comparative Lipase Actions of Different Rabbit Tissues. H. M. Noyes and K. G. Falk, New York. —p. 687.
Studies on Enzyme Action. XXX. Comparative Study of Characteristic Lipase Actions of Tissues of Different Animals and of Some Human Tissues. Falk et al., New York.—p. 697.
Relation of Chemical Structure to Rate of Hydrolysis of Peptides. II. Hydrolysis with Enzyme (Erepsin). P. A. Levene and H. S. Simms, New York.—p. 711.
Researches on Amines. X. Formation of Tyramine by Decarboxylation of Tyrosine Produced from Silk. T. B. Johnson and P. G. Daschavsky, New Haven, Conn.—p. 725.
Fat Absorption Through Channels Other Than Left Thoracic Duct. H. C. Ekstein, New Haven, Conn.—p. 737.
Synthesis of Lecithin in Animal Organism. H. C. Eckstein, New Haven, Conn.—p. 743.
Plant Phosphatides. I. Lecithin and Cephalin of Soy Bean. P. A. Levene and I. P. Rolf, New York.—p. 759.
Variations in Concentration of Globulin and Albumin Fractions of Blood Plasma Following Injection of Bacillus Abortus. P. E. Howe and E. S. Sanderson, Princeton, N. J.—p. 767.
Studies in Yeast Metabolism. I. A. K. Balls and J. B. Brown, Philadelphia.—p. 789.
Studies in Yeast Metabolism. II. Carbon Dioxid and Alcohol. J. B. Brown and A. K. Balls, Philadelphia.—p. 823.

Effect of Sodium Benzoate on Blood and Urine.—Swanson finds that after ingestion of sodium benzoate the simultaneous analyses of blood urine of normal persons show: (1) no increase in the urea nitrogen content of the whole blood and plasma, but a decrease in the urea nitrogen of the urine; (2) an increase of the uric acid content of the whole blood and plasma, and a marked decrease in the uric acid content of the urine; (3) the glycin portion of the blood amino-acids and of those which are normally excreted while fasting appears to be only a small percentage, if any, of the total; and (4) the experimental findings suggest a probable synthesis of glycin from the constituents which normally are converted into urea, but it appears improbable that uric acid supplies any glycin.

Effect of Ultraviolet Light on Growth.—Confirmatory evidence is offered by Nelson and Steenbock that irradiated rats put in the same cage with nonirradiated rats are able to induce growth in the latter even when kept on screens to minimize consumption of excreta. Evidence is also presented that mere irradiation of the false screen bottoms of rat cages is sufficient to induce normal growth in rats when they are kept on a ration deficient in the antirachitic vitamin. No evidence was obtained that the above mentioned reactions were brought about by secondary radiations acting externally on the animals. No evidence was obtained that irradiation with ultraviolet light will confer growth-promoting or antirachitic properties on air. It is suggested that the antirachitic growth promoting reaction was induced in the animals by the ingestion of photochemically activated constituents of the excreta.

Composition of Blood Plasma in Renal Disease.—The average normal blood plasma rations as recorded by Macallum are as follows: sodium, 100; potassium, 6.11; calcium, 2.71; and magnesium, 0.85. In only five of the twenty-three cases of cardiorenal disease studied by Rabinowitch could it be definitely stated that there was a disturbance in ratios of any of the elements. From both the clinical diagnosis and blood urea nitrogen data it is obvious that in more than half of these cases (fourteen) their was a marked impairment of renal efficiency. All these patients died. With the exception of one case of eclampsia in which a disturbed ratio was found, the remainder of disturbed ratios are all found in the advanced (uremic) cases. That there were nine other such cases which showed normal ratios in spite of the advanced renal lesions appears to emphasize further the fundamental nature and primary importance of this function of the kidney. An observation which may by further studies be found significant is that in each of the five cases with the high potassium ratios, the heart at necropsy was found markedly dilated. The electrocardiographic tracings in these cases were normal, so far as the spread of excitation wave over the ventricles, duration of refractory period, and conduction interval of the bundle of His were concerned.

Journal of General Physiology, Baltimore

7: 327-447 (Jan.) 1925

Electrical Conductivity of Pure Protoplasm. S. C. Brooks, Washington, D. C.—p. 327.
Studies on Bioluminescence. XVII. Fluoroscence and Inhibition of Luminescence in Ctenophores by Ultraviolet Light. E. N. Harvey, Princeton, N. Y.—p. 331.
Number of Blood Corpuscles in Fishes in Relation to Starvation and Seasonal Cycles. A. A. Schaefer.—p. 341.
Excitation and Inhibition of Luminescence in Berae. C. Heymans, Ghent, Belgium, and A. R. Moore, New Brunswick, N. J.—p. 345.
Conductivity as Measure of Permeability of Suspended Cells. S. C. Brooks, Washington, D. C.—p. 349.
Effect of Light on Permeability of Paramecium. C. Packard, New York. —p. 363.
Kinetics of Decomposition of Peroxid by Catalase. J. H. Northrop, New York.—p. 373.
Electro-Endosmosis Through Mammalian Serous Membranes. I. Hydrogen Ion Reversal Point with Buffers Containing Polyvalent Anions. S. Mudd, New York.—p. 389.
Locomotion of Limax. II. Vertical Ascension with Added Loads. W. J. Crozier and H. Federighi, New Brunswick, N. J.—p. 415.
Temporary Abolition of Phototropism in Limax After Feeding. W. J. Crozier and R. L. Libby, New Brunswick, N. J.—p. 421.
Critical Thermal Increments for Rhythmic Respiratory Movements of Insects. W. J. Crozier, New Brunswick, N. J. and T. B. Stier, Washington, D. C.—p. 429.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

24: 423-486 (Jan.) 1925

Local Anesthetic and Antispasmodic Actions of Some Ethers and Esters of Saligenin. H. H. Jensen and A. D. Hirschfelder, Minneapolis.—p. 423.
*Effects of Excitement on Action of Soporific Drug (Sodium Barbital). A. D. Hirschfelder and C. H. Rice, Minneapolis.—p. 449.
Rôle of Epinephrin on Production of Edema by Local Anesthetics. A. D. Hirschfelder, I. Backe and J. Jennison, Minneapolis.—p. 453.

*Penetration of Mercurochrome, Acriflavine and Gentian Violet into Edematous Tissues. A. D. Hirschfelder, G. Malmgren and D. Creavy, Mineapolis.—p. 459.
Insulin and Tissue Sugar. C. F. Cori and G. T. Cori, Buffalo.—p. 465.

Effect of Excitement on Action of Sodium Barbital.—The results of the experiments done by Hirschfelder and Rice indicate that fear and excitement definitely diminish the soporific action of sodium barbital in rats. Even with larger doses, the effect produced is a gradual stupefaction or narcosis rather than a natural sleep. This narcosis comes on only when doses large enough to produce muscular incoordination have been given. These facts seem to have a definite bearing on the question of the administration of soporific drugs to excited persons, and indicate the importance of using all possible means to quiet the patient's mind at the time the soporific drug is administered.

Penetration of Tissues by Mercurochrome-220 Soluble.—Hirschfelder, Malmgren and Creavy attempted to determine to what extent these substances are excreted or diffused from the blood into areas in which the tissues are injured or diseased, and whether if they do penetrate into such injured tissues, they do so in concentrations that are antiseptic or bactericidal to the common pathogenic organisms, e. g., the staphylococcus or colon bacillus. It was found that both mercurochrome-220 soluble and acriflavine penetrate gradually from the blood into the edema fluid in paraphenylendiamin edema, mercurochrome more rapidly and in higher concentration than acriflavine. When doses proportional to those used clinically are employed, these drugs do not render the edema fluid bactericidal or bacteriostatic. No evidence was found to indicate that gentian violet penetrates from the blood into the edema fluid. In the light of these findings, it is questionable whether injections of these drugs in these concentrations could be expected to influence the course of local and general infections encountered in clinical practice.

Maine Medical Association Journal, Portland

16: 1-18 (Jan.) 1925

Cesarean Section from Point of View of General Surgeon. M. W. Spear, Rockland.—p. 1.
Modern Treatment of Acne Vulgaris. R. B. Josselyn, Portland.—p. 5.

Minnesota Medicine, St. Paul

8: 77-138 (Feb.) 1925

Foreign Proteins as Therapeutic Agents in Treatment of Ocular Inflammation. J. F. Fulton, St. Paul.—p. 77.
Present Knowledge of Cancer. L. B. Wilson, Rochester.—p. 82.
Tuberculosis in Infancy. D. M. Siperstein, Minneapolis.—p. 89.
Osteomyelitis in Children. C. C. Chatterton, St. Paul.—p. 91.
Arthroplasty. M. S. Henderson, Rochester.—p. 97.
Surgery of Thyroid. M. Nordland, Minneapolis.—p. 104.
Anesthesia in Operations on Thyroid at Schmieden Clinic in Frankfort-on-the-Main. C. A. Hellwig, Germany.—p. 107.
Artificial Pneumothorax for Acute Lung Abscess. E. K. Geer, St. Paul.—p. 109.
Bread Substitutes in Diabetic Diets. R. Rockwood, Rochester.—p. 113.
Treatment of Extensive Injuries of Scalp. O. N. Meland, Warren.—p. 116.

Nebraska State Medical Journal, Norfolk

10: 37-72 (Feb.) 1925

Differential Diagnosis Between Intraperitoneal and Retroperitoneal Abdominal Cysts. J. E. Summers, Omaha.—p. 37.
*Mercurochrome Therapy. C. A. Roeder and W. H. Judd, Omaha.—p. 41.
Vincent's Angina. A. A. Conrad, Crete.—p. 48.
Physiotherapy in Pulmonary Tuberculosis. M. J. Breuer, Lincoln.—p. 56.
Treatment of Acute Suppurative Otitis Media. H. B. Lemere, Omaha.—p. 59.
Treatment of Diabetes Mellitus from Standpoint of General Practitioner. P. A. Sundbury, Holdrege.—p. 61.

Mercurochrome Therapy.—Experience based on twelve cases led Roeder and Judd to the conclusion that mercurochrome-220 soluble has a place in therapeutics, provided it is administered while the patient is still displaying a resistance toward the present infection. It has been without benefit in the terminal stages of infections; i. e., after the patient has lost his resistance. Mercurochrome, like all other therapeutic nonbiologic adjuvants, requires tremendous assistance on the part of the body economy. It is not a specific for any one type of organism, and it cannot be looked on as a neutralizer of toxins, which also indicates that it must be administered early. Also, the greater the reaction obtained, the more favorable the result. Such patients have received the best results and have been harmed in no way, with the exception of a salivation, which has disappeared in a short time.

New Orleans Medical and Surgical Journal

77: 301-348 (Feb.) 1925

*Survey of Obstetric Complications from Records of Charity Hospital. C. J. Miller, New Orleans.—p. 301.
Nervousness. C. P. May, New Orleans.—p. 307.
Focal Infection in Arthritis. I. C. Knox, Vicksburg, Miss.—p. 310.
Fluoroscopy in Medical Diagnosis. R. C. Findlay, Jackson, Miss.—p. 314.
Air Cooled Ultraviolet Light Therapy. A. J. Pacini, Chicago.—p. 317.
More Recent Progress in Ophthalmology. C. A. Bahn, New Orleans.—p. 319.
Treatment of Venereal Diseases from Standpoint of Prevention. R. A. Hennessey, Memphis, Tenn.—p. 325.
Eye and Clinician. T. J. Dimitry, New Orleans.—p. 328
Heart from Standpoint of Functional Capacity. W. Rowland, Oxford, Miss.—p. 331.
Clinical Diagnosis of Chronic Pancreatic Disease. D. N. Silverman, New Orleans.—p. 335.

Obstetric Complications.—Among the cases analyzed by Miller, there were 299 cases of abortion with a gross mortality of four and a corrected mortality of three, or 1 per cent.; twenty-five premature labors, with a mortality of one, or 4 per cent.; 102 infected puerperal cases, with a gross mortality of eleven and a corrected mortality of seven, or 6.8 per cent.; eighty-five incidental complications of pregnancy, with a gross mortality of ten and a corrected mortality of nine, or 10.6 per cent.; and forty-five accidental complications, with a mortality of one, or 2.2 per cent. In all, exclusive of rest cases, 556 cases were admitted to the ward during the three year period, with a gross mortality of twenty-seven and a corrected mortality of twenty-one, or 3.8 per cent. Four hundred and twenty-six of these cases were either postabortal or postpartal, and the corrected mortality in this series was eleven, or 2.6 per cent.

New York State Journal of Medicine, New York

25: 103-146 (Jan. 30) 1925

Ocular Signs of Some Brain Tumors. A. J. Bedell, Albany.—p. 103.
Pediatrician and Preventive Pediatrics. H. L. K. Shaw, Albany.—p. 109.
Atrophic Rhinitis. C. C. Cott, Buffalo.—p. 112.
Acute Ethmoiditis. F. M. Sulzman, Troy.—p. 114.
Complete Ectopia Lentis: Case. E. W. Kennedy, Rochester.—p. 117.
*Do Elderly People Have Infantile Paralysis? A. L. Hall, Fulton.—p. 118.

Infantile Paralysis in Adults.—Hall reports the occurrence of a typical case of anterior poliomyelitis in a man, aged 80. The symptoms were pathognomonic of infantile paralysis, but the advanced age of the patient puzzled Hall.

South Carolina Medical Association Journal, Greenville

21: 321-348 (Jan.) 1925

Treatment of Cicatricial Stricture of Esophagus by Retrograde Method. H. W. Rice, Columbia.—p. 323.
Importance of Recognition of Early Symptoms in Mental Diseases. W. M. Bevis, Columbia.—p. 326.
Parturition a Surgical Procedure. M. P. Rucker, Richmond, Va.—p. 331.

Texas State Journal of Medicine, Fort Worth

20: 469-526 (Jan.) 1925

What Texas Has Done for Her Insane. W. L. Allison, Fort Worth.—p. 479.
Proper Care and Treatment of Insane. J. A. McIntosh, San Antonio.—p. 483.
Alcoholic and Drug Addicts; Legal Phases of Their Care. J. S. Turner, Dallas.—p. 487.
Present Status of Public Health Laws of Texas; Suggestions for Needed Changes. A. L. Lincecum, Dallas.—p. 489.
Coordination in Health Departments. M. Duggan, Austin.—p. 492.
Needs of State Board of Health. W. H. Beazley, Honey Island.—p. 493.
Relation of City Health Department to State Health Department: Suggestions for Needed Changes in Law. A. H. Flickwir, Houston.—p. 494.
Full-Time County Health Officers. A. P. Harrison, Austin.—p. 496.
Legislation Pertaining to Municipal Sanitation. V. M. Ehlers, Austin.—p. 499.
Venereal Disease Control. C. E. Durham, Austin.—p. 500.
Obstacles Retarding Progress of Maternity and Infant Work in Texas. H. Garst, Austin.—p. 502.
Conservation of Public Health; Problem in Education. W. B. Russ, San Antonio.—p. 506.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Radiology, London

30: 1-40 (Jan.) 1925

*Diverticula of Stomach: Possible Source of Error in Radiologic Diagnosis of Gastric Ulcer. A. F. Hurst and P. J. Briggs.—p. 1.
*Diathermy in Treatment of Pharyngeal Cancer. D. M'Kenzie.—p. 9.
*Action of Radium and Roentgen Rays Correlating Production of Intestinal Changes; Thrombopenia and Bacterial Invasion. J. C. Mottram and A. N. Kingsbury.—p. 18.

Diverticula of Stomach Confused with Ulcer.—True diverticula of the stomach are very rare. Hurst reports two cases and calls attention to the fact that while these cases can easily be diagnosed with the roentgen ray because of the remarkable position, even outline and uniform rounded shape of the diverticulum, the free mobility, both with the stomach and to a slight extent independently of it, and the absence of tenderness, a diagnosis of ulcer is often made because of failure to note these characteristic signs.

Diathermy in Treatment of Cancer of Pharynx.—M'Kenzie expresses the opinion that no remedy hitherto available can equal diathermy in the treatment of cancer of the throat, because there is no other remedy that is applicable both to eradicable and ineradicable cancers. Diathermy exercises on the area to which it is applied a twofold action; namely, a cauterizing action, combined with a coagulating effect by which diseased tissues can be destroyed; and, secondly, an antiseptic effect in virtue of which the tissues in and some distance beyond the range of its destroying powers are sterilized of bacteria. M'Kenzie has operated radically in six cases only, and of these, there has been no recurrence in one case for five years; in two cases no recurrence for one year; in one case the removal proved to be incomplete, the pharyngeal wound not healing. With this exception it is worth noting that in none of the recurrences did the neoplasm appear in the areas to which diathermy had been applied.

Radiation; Thrombopenia.—An exposure to radium sufficient to produce a mild thrombopenia is associated with the presence of intestinal bacteria in the blood stream. Such an exposure does not interfere with the general or humoral resistances of the animal against bacterial invasion, previous researches having shown that the exposure determines an interference with the production of mucus by the intestinal mucosa and an invasion of the mucosa by bacteria. Mottram and Kingsbury therefore conclude that the epithelial barrier of the intestine against invasion is broken down by the radiation, and that the thrombopenia and the presence of bacteria in the blood are secondary effects.

British Journal of Surgery, Bristol

12: 413-624 (Jan.) 1925

Macewen's Osteotomy. D'Arcy Power.—p. 413.
Acute "General" Peritonitis and Its Treatment. W. S. Handley.—p. 417.
*Cholesterol Content of Blood in Relation to Genito-Urinary Sepsis. W. MacAdam and C. Shiskin.—p. 435.
*Juxta-Ampullary Carcinoma of Wirsung's Duct. G. Hadfield.—p. 444.
Treatment by Plating of Fracture of Single Condyle of Femur with Displacement Backward of Distal Fragment to Popliteal Space. L. Sutcliffe.—p. 450.
Retroperitoneal Hernia. A. R. Short.—p. 456.
*Results of Perineal Excision in Treatment of Carcinoma of Rectum. W. B. Gabriel.—p. 466.
*Osseous Metastasis from Primary Carcinoma of Right Mamma. G. T. Beatson.—p. 473.
*Causation of Postoperative Pneumonia. H. Featherstone.—p. 487.
Spondylitis Deformans. R. L. Knaggs.—p. 524.
*Subperitoneal Effusions Simulating Acute Intraperitoneal Disease. J. L. Joyce.—p. 547.
Maternal Birth Palsy. C. Lambrinudi.—p. 554.
Anatomic Relations of Gasserian (Semilunar) Ganglion. R. D. Lockhart. —p. 558.
Study of Thyroglossal Tract. A. P. Bertwistle and J. E. Frazer.—p. 561.
Thyroglossal Cysts and Fistula. H. Bailey.—p. 579.
Large Cavernous Hemangioma of Left Lobe of Liver Causing Obstruction to Cardiac Orifice of Stomach. C. P. G. Wakeley.—p. 590.
Unilateral Affection of Skeleton of Unknown Origin. H. A. T. Fairbank.—p. 594.
Gallstones with Gumma of Liver Mistaken for Malignant Disease of Gallbladder: Case. C. P. G. Wakeley.—p. 609.
Loose Bodies in Ankle Joint. G. H. Stevenson.—p. 611.
Strangulated Hernia Through Foramen of Winslow. W. G. McKenzie and D. Wood.—p. 613.
Myoma of Stomach with Gastroduodenal Intussusception: Case. L. E. Barnett.—p. 615.
Adenoma of Small Intestine with Intussusception. G. M. Kendall and I. W. Corky.—p. 617.

Blood Cholesterol in Genito-Urinary Sepsis.—MacAdam and Shiskin suggest that a low "blood-cholesterol" in a case of acute or chronic retention due to prostatic enlargement is significant of a low capacity for antibody formation, and points to the case being a bad operative risk as regards prostatectomy. The value of cholesterol estimations is further enhanced by their affording information as to a low bacterial resistance, even when the clinical manifestations of such are absent or uncertain. The combination of a high blood urea and a low cholesterol content is of very serious prognosis, and points to an undoubtedly bad surgical risk.

Juxta-Ampullary Carcinoma of Wirsung's Duct.—Hadfield records the case of a previously healthy man of 48 who died after an illness of three and a half months, characterized by deepening jaundice, without definite intermission, and increasing weakness. Postmortem examination showed a sessile nodule of carcinoma the size of a pea arizing in the wall of Wirsung's duct just above the dilated ampulla of Vater, and obstructing the common bile duct by lateral pressure. Metastases were present in the retropancreatic glands. The nodule of growth was the average size and shape of the enlarged glands, and situated so near them that it was extremely difficult to distinguish between the growth and the enlarged glands by palpation of the duodenum at the operation. The gallbladder was found distended by a clear colorless fluid at operation. A functioning accessory pancreatic duct was present. The Van den Bergh reaction and a stool analysis did not materially assist the clinical diagnosis. Death was probably due to widespread pressure atrophy of the liver cells, secondary to obstruction of the common duct. The case reported by Hadfield presented the following points of interest, apart from the rare anatomic localization of the tumor: (1) Absence of definite intermissions in the intensity of the jaundice. (2) Concealment of the enlarged gallbladder by the swollen liver—an apparent exception on clinical examination to Courvoisier's law. (3) The retropancreatic glandular metastases were of the same size and consistence as the miniature growth itself: this was, therefore, mistaken for an enlarged gland, and the duodenum was not opened. (4) There was complete sequestration of the gallbladder which contained colorless watery fluid; the grave significance of this is borne out by the extensive atrophy of the liver parenchyma found post mortem. (5) The relatively benign nature of the tumor was striking: there was no infiltration of the mucous membrane of the bowel, and the lymphatic metastases were limited to the retropancreatic set of glands.

Treatment of Carcinoma of Rectum.—The type of operation done in the 143 cases reviewed by Gabriel has been that described by Lockhart-Mummery. The majority of the excisions were performed under spinal anesthesia, with scopolamin and morphin, or gas and oxygen. There have been twenty-two deaths, i. e., 15.4 per cent. immediate mortality. During the course of the last three years the operation mortality has been reduced to 12.0 per cent. (seven deaths in fifty-eight operations). Local sepsis, with death from toxemia or septicemia, occurred in eleven cases. There were four fatal cases of urinary fistula. Postoperative pneumonia accounted for two fatal cases. There were two deaths from shock. One case of intestinal obstruction in a male subject occurred three days after perineal excision. One man died from exhaustion from no definite cause a month after operation, and in one case in which death occurred on the third day the notes are defective. Of the 121 patients discharged from hospital convalescent after perineal excision, forty-four are known to be dead. An analysis of their duration of life after operation shows that when recurrence takes place it causes death, as a rule, within five years after operation (93 per cent.), and that 80 per cent. of these deaths occurred within three years. A consideration of the cause of death, so far as can be ascertained, shows that recurrence in the pelvis occurred in eleven cases, in the abdomen or liver

in eleven cases, and two are alleged to have had secondary deposits in the brain. In sixteen cases the cause of death has not been ascertained, while in four cases the cause was probably unrelated to the carcinoma of the rectum. A consideration of the thirty-five deaths occurring in less than three years after operation shows that in fifteen, i. e., 43 per cent., there was extrarectal spread at the time of operation. Many of the remaining twenty cases, presented extensive and deeply ulcerated tumors, and in two the growth was several inches above the peritoneal reflection, rather beyond the scope of a perineal excision. By deducting from the total 143 cases twenty-two immediate deaths, forty-four subsequent deaths, and thirteen untraced, the figure is arrived at of sixty-four patients who are now living after perineal excision. So far as is known as the result of a very recent inquiry, these sixty-four cases are all well known and free from recurrence with the exception of five. There are two cases free from recurrence thirteen years after perineal excision: one patient alive at ten years, one at nine years, two over eight years, and nine patients alive and well at periods of from five to eight years after operation. The functional result in most of these cases is extremely good.

Bone Metastases from Breast Cancer.—Beatson cites a case of carcinoma of the right mamma with lymph-spread to skin, glands, pleurae, clavicle, skull, and vertebrae; and with blood spread to all the long bones of all the limbs, and to the liver, lungs and kidneys, so that the case is partly lymphatic and partly blood spread. The blood condition is of interest, showing diminution of red cells with marked increase of leukocytes, mostly of the polymorphonuclear type.

Cause of Postoperative Pneumonia.—Every factor which might be of significance in the etiology of postoperative pneumonia is considered by Featherstone in this survey. It appears that the anesthetic agent and the method of administration, save in special cases, seldom are decisive factors. Age and sex are not of importance. General health and local disease of the lungs may play a considerable part. At operation, every care should be taken to prevent loss of heat, of fluid, and of blood, and especially exhaustion from trauma to nerve tissue, and to highly vascular parts. Infection of the lung is often by means of aspiration in the presence of certain other factors. Severe sepsis in other regions affects the lung via the blood stream. There is evidence that lymphatic infection through the right half of the diaphragm leads first to pleurisy and then to pneumonia. In the absence of severe sepsis, operations on the abdomen, and especially the upper abdomen, provide the start of the chain of events which leads to pneumonia.

Subperitoneal Effusions Simulating Intraperitoneal Disease.—Joyce says that a rapid effusion of blood, serum, pus, or urine into the retroperitoneal tissues may simulate acute intraperitoneal disease. A sudden and massive effusion into the retroperitoneal tissues of either loin can cause acute intestinal obstruction. A large retroperitoneal effusion in the region of the loin gives rise to a striking and characteristic sign on percussion. Corresponding to the site of a displaced and collapsed ascending or descending colon, there is an abrupt line of demarcation between a fixed dulness in the loin and a tympanitic note over the rest of the abdomen.

British Medical Journal, London

1: 145-196 (Jan. 24) 1925

Sphincters of Alimentary Canal and Their Clinical Significance. A. F. Hurst.—p. 145.
Radiologic Examination in Organic Diseases of Colon: Opaque Edema Method. S. G. Scott.—p. 151.
*Concealed Accidental Hemorrhage. T. H. Richmond.—p. 154.
*Protein Poison Theory. Application to Headache and Migraine. R. Curtis-Brown.—p. 155.
*Cancer of Breast: Recurrence Thirty-One Years After Operation. F. J. Steward.—p. 156.
*Diagnostic Value of Sugar Content of Cerebrospinal Fluid in Lethargic Encephalitis. H. A. Cookson.—p. 157.
Thrombo-Angiitis Obliterans. H. Jaffé.—p. 157.
Case of Leontiasis Ossea. D. Gill.—p. 158.
Creosote in Influenzal Pneumonia, Chronic Influenza and Lethargic Encephalitis. R. R. Wade.—p. 158.
Cure of Pruritus Senilis by Use of Flesh Brush (Scrubbing). A. W. Williams.—p. 158.
Poisoning by Bittersweet. J. Reid and J. Kennedy.—p. 158.

Concealed Accidental Hemorrhage.—Richmond relates the case of a woman, aged 26, in the thirty-fifth week of her pregnancy, who without any apparent cause was seized with severe cramplike pain in the epigastrium. An hour later she became faint and complained of a sensation of great fulness in the abdomen. She was carried to bed, and shortly afterward felt sick and vomited without gaining any relief. The abdomen was greately distended and gave a sensation of tenseness. No blood was found in the vagina, nor was there any staining of the patient's clothing. The os was dilated (2 cm.), with distended membranes bulging through. Concealed accidental hemorrhage was diagnosed and cesarean section recommended. When the abdomen was opened, a little free sanguineous fluid escaped. The distention of the uterus was definitely limited to the body, which was of a slaty gray with purplish mottling, while the lower uterine segment, below the anterior peritoneal reflection, which was raised to the level of the umbilicus, was elongated and showed neither gray coloration nor mottling. No difficulty was experienced in extracting a well developed dead child weighing about 7 pounds (3.2 kg.) by the presenting breech. The placenta was free in the uterine cavity and was removed with three or four large dark blood clots. Pituitary extract (1 c.c.) was given subcutaneously, and the uterus lifted out of the abdominal cavity. It remained flabby and toneless, and except while directly compressed, there was a steady oozing from its cavity. The placenta was of normal shape and size, but four fifths of the villi showed that they had been compressed. The remainder occupied an arc embracing a third of the periphery of the placenta. When the uterus was removed from the abdominal cavity, within a minute of giving pituitary extract, the intestines were seen collapsed and ivory white; this persisted during the time the abdomen was opened.

Protein Poison Theory.—Curtis-Brown's theory differs from that of anaphylaxis, which has been generally accepted to explain various food idiosyncrasies. In anaphylaxis a preliminary sensitization is required, while Curtis-Brown maintains that the metabolism of the individual is inadequate. Such an inadequacy for the metabolism of nitrogenous food is most usually inherited, but further damage can be prevented by appropriate diet. The protein poison may act directly on the tissue cells of the mucous membrane or the skin, causing, for example, in one instance bronchitis or colitis, and in another instance such a disease as eczema. Or, again, it may act indirectly, as through the endocrine or nervous system. Migraine occurs in persons who have inherited a damaged metabolism for nitrogenous foods. Headache is one of the commonest manifestations of protein poison. The headaches caused by protein poison vary in severity from the mildest headache to the severest forms of typical migraine. The etiology of all functional headaches is the same. In migraine, however, there is the typical inherited insufficient protein metabolism. Curtis-Brown says that the quickest and best way to ascertain what foods are deleterious in each individual case is to begin with a diet free from protein, especially animal protein, and then to build up gradually a suitable diet. The foods that he has found potent in causing headache are meat, fish, poultry, game and extract, such as soups and gravies made from them; eggs, milk and cheese; fruit and fruit juices; coffee, tea, chocolate and alcohol; and, among the vegetables, tomatoes and mushrooms. Curtis-Brown prescribes a diet of polished rice, butter, toast, a few green vegetables, and water. So soon as the headache is distinctly improved, the diet should be amplified, at first with other vegetables, then by a small amount of meat, once a day. Every article of nitrogenous nature must be suspected until proved to be harmless in the case under treatment. The protein of cereals and vegetables is usually well borne.

Cancer of Breast with Recurrence After Thirty-One Years.—Steward relates the case of a woman, aged 81, who had been operated on for cancer of the left breast when she was 50. A few months ago three small, hard nodules were discovered beneath the skin of the left chest in the immediate neighborhood of the scar of the operation wound. These had

slowly increased in size. During the past two months some enlargement of the veins over the front of the left chest had appeared, and the patient complained of some degree of breathlessness and of pain in the chest. She died suddenly. Steward believes that the superficial nodules were carcinomatous, and that there was also a growth in the mediastinum, which had probably been present for some time, and which presumably caused the patient's death. Steward is convinced that the subcutaneous nodules and the mediastinal growth were directly connected with the original growth in the breast, and, if this is so, it would appear that carcinoma cells may lie dormant in the tissues for a period of more than thirty years, and for all this time give no sign, and then simultaneously, in at least four separate and distinct sites, once more become active.

Cerebrospinal Fluid Sugar Increased in Epidemic Encephalitis.—In almost every one of fifteen cases finally diagnosed as epidemic (lethargic) encephalitis, Sookson says, the sugar content was definitely increased above the normal. In no instance was there any diminution. He regards this as a valuable point in diagnosing this condition from the group of other meningeal diseases, especially from tuberculous meningitis, in which the sugar content is reduced considerably. Also, in nearly every case of epidemic encephalitis in the series, the eye sign described by Throp was present.

Glasgow Medical Journal

21: 1-71 (Jan.) 1925

*Pathologic Evidence Bearing on Disease Incidence in Calcutta. L. Rogers.—p. 1.
*Embolism of Spinal Cord. A. W. Harrington.—p. 28.
Myositis Ossificans Traumatica Occurring in Region of Patella. E. G. Gerstenberg.—p. 33.
Student Life at Glasgow University About Ninety Years Ago. J. H. Alexander.—p. 37.

Disease Incidence in Calcutta.—The postmortem records and the vital statistics of Calcutta show that one third of the mortality is due to tropical disease, and two thirds to diseases of world-wide distribution. The age incidence shows four times as many deaths in persons over 50 in the London as in the Calcutta postmortems, and this proportion is the same when the purely tropical diseases are excluded from the calculation. The Calcutta figures show a great excess over the London ones in deaths from septicemia, tetanus, tuberculosis, lobar pneumonia, nontuberculous meningitis and cirrhosis of the liver, the first, fourth and fifth being caused by the streptococcal group of organisms, which are favored by the high mean temperature and overcrowding in the houses. The London series shows a marked excess in the case of circulatory diseases, especially in the case of rheumatic endocarditis and mitral stenosis secondary to it, which is nearly, if not quite, absent in Bengal; and to a less extent in atheromatous disease, including aneurysms, due to the age factor, as atheromatous changes have a very similar age incidence in different decades of life in the two series, and afford no evidence of especially early degenerative arterial affections to account for the shorter life of the Bengal race, while cerebral hemorrhages are also much more frequent in the London series, again on account of the age factor. The fourfold excess of cirrhosis of the liver in Bengal, Roger says, cannot be explained on the alcoholic theory of its causation, as that is a very small factor in India; but evidence is produced that it is secondary to chronic ulceration of the gastro-intestinal track, chiefly in the form of long standing amebic dysentery. The Indian races in Bengal have a lower resistance to many specific diseases, such as pneumonia, cholera, dysentery, tuberculosis and fevers, which are their most frequent causes of death, than Europeans living in Bengal. This is the main cause, in addition to the prevalence of tropical diseases, for their low expectation of life, and is probably due partly to low racial vitality, most likely associated with the custom of early child marriage, and partly to insanitary conditions.

Embolism of Spinal Cord.—Harrington reports a case of infective endocarditis with embolism of the vessels of the spinal cord. The patient died. The brain, on section, showed marked edema, with a patch of softening in the anterior limb of the internal capsule on the right side. There was extensive softening of the whole lumbar enlargement of the cord. On microscopic examination, a small embolus was determined about the level of the eleventh dorsal segment. Gram-positive cocci similar to those found in the mitral valve were present in scanty numbers in the neighborhood of the embolus. This case is also of interest in its relationship to the etiology of acute myelitis.

Heart, London

11: 299-411 (Dec. 29) 1924

Influence of Circulatory Disturbances on Gaseous Exchange of Blood. Hyperthyroidism. H. W. Davies, J. Meakins and J. Sands.—p. 299.
*Complete Heart Block in Diphtheria. H. M. Marvin and R. C. Buckley.—p. 309.
Local Changes of Color in Skin Deprived of Its Normal Blood Supply; Local Asphyxia. E. P. Wolf.—p. 327.
Experimental Studies in Arteriovenous Fistula: Cardiac Output. T. R. Harrison, W. Dock and E. Holman.—p. 337.
*Absorption of Fluid in Cardiac Dropsy. C. Bolton.—p. 343.
Vascular Reactions in Man in Response to Infundin; Behavior of Capillaries and Venules. B. Sacks, Ne.—p. 353.
*Supernormal Recovery Phase, Illustrated by Two Clinical Cases of Heart Block. T. Lewis and A. M. Master.—p. 371.
*Influence of Hydrogen Ion Concentration on Conduction in Auricle of Perfused Mammalian Heart. A. N. Drury and E. C. Andrus.—p. 389.

Complete Heart Block in Diphtheria.—Two cases of complete heart block in diphtheria are added by Marvin and Buckley to the nine proved cases collected from the literature. Electrocardiograms in both instances showed pronounced and progressive changes in the ventricular conduction system. In both cases the electrocardiogram revealed the presence of heart block before the diagnosis could be made clinically; in one of them the condition would not have been suspected at any time without such records. The ventricular rate was rapid in both patients, and in one was totally irregular for several days before death. The necropsy in the second case showed extensive changes in the myocardium, with profound damage to the conduction system. There was apparently a close correlation between the electrocardiographic evidence and the anatomic findings.

Absorption of Fluid in Cardiac Dropsy.—Bolton's observations indicate that absorption by the lymphatics of the peritoneum is unimpaired in obstructive ascites. The only condition in which it may be supposed to play a part as a factor in the dropsy of uncompensated heart disease is that in which a very high venous pressure at the root of the neck may impede the entrance of lymph into the venous system. The ascitic fluid is continually being absorbed, chiefly by the lymphatics of the diaphragm and so up through the chest, and to a less extent by the thoracic duct. The presence of the ascitic fluid is due to a continual output of lymph at a rate considerably above the normal. An increase in the amount is due to an increasing output, and a decrease in the amount, leading to final disappearance, is due to a gradual decrease in the output of lymph. The fluid is constantly circulating from the blood to the peritoneum and back again. In a patient with cardiac dropsy, the effect of gravity is to relieve the portal system at the expense of the legs. In the horizontal position edema of the legs diminishes and ascites increases. With the legs down lymph output into them increases and the output into the peritoneum consequently falls, and, absorption from this cavity continuing, the ascites diminishes. Absorption by the blood vessels of the peritoneum is unimpaired in this form of ascites, but the particular system of vessels concerned in this act is not decided by these experiments.

Supernormal Recovery Phase.—A case is described by Lewis and Master in which complete heart block was disturbed by the transmission of impulses from auricle to ventricle. These responses are seemingly in every way normal but occur over a limited reach of the cycle. The tissue involved is thought to be the auriculo-ventricular node. The phase of peculiar responsiveness falls early in the cycle and is comparable to the overswing of the recovery curve which has been termed the "supernormal phase." A second case is described, which presents a similar phenomena, though it differs from the first in manifesting long conduction intervals

between auricle and ventricle. The cases described lend some support to the theory of parasystolic irregularities put forward by Kaufmann and Rothberger. Their bearing on this theory is briefly discussed.

Tachycardia with Retrograde Heart Block.—A case of tachycardia of A-V nodal origin is described by Drury in which retrograde heart block and reciprocal rhythm are clearly and constantly displayed during the paroxysms.

Journal of Tropical Medicine and Hygiene, London

28: 21-32 (Jan. 15) 1925

Prevention and Treatment of Malaria. W. E. Deeks.—p. 21.
*Results of Noguchi Treatment of Prophylactic Measures Employed in 1923 Yellow Fever Epidemic in Belize. J. Cran.—p. 26.

Yellow Fever Treatment and Prophylaxis.—The outbreak of yellow fever in Belize, Cran says, proved the value of the Noguchi serum as a curative agent, and of the Noguchi vaccine as a prophylactic. The only two whites who contracted the disease in the town had not been vaccinated with this serum, while 100 or 200 who had been vaccinated escaped, although they were equally susceptible and equally exposed.

Lancet, London

1: 111-162 (Jan. 17) 1925

Acute Drunkenness: Medicolegal Aspects, Symptoms and Tests. J. Purves-Stewart.—p. 111.
Relation of Medicine to Natural Sciences. B. Moynihan.—p. 115.
*Feeding of Abnormal Baby by So-Called Truby-King Methods. M. M. Burgess.—p. 117.
*Cerebral Abscess Complicating Abscess of Lung. S. Barling.—p. 121.
*Abnormally Low Pulse Pressures in Cases of Neurosis. W. Bain and C. W. C. Bain.—p. 123.
*Anticonsumptive Therapeusis. R. Hervé.—p. 124.
*Air Embolism Occurring During Urethroscopy. R. S. Roper.—p. 126.
Case of Displacement of One Eyeball Due to Myxoma of Frontal Sinus. G. Klionsky.—p. 126.
*Useful Stain for Blood Films. A. K. Gordon.—p. 127.

Feeding the Abnormal Baby.—Burgess endeavors to show that however reasonable and scientific the theory that the formula of a baby's feed should bear a close analogy to that of human milk, it fails in many cases in its practical application, particularly in the abnormal baby. After a considerable experience in percentage feeding, he has come to the conclusion that there is something more in human milk than is expressed in its percentage formula and caloric value, and that until a fat is found that can be tolerated by the infant, incalculable harm is done the infant population by insisting on a strict adherence to percentage feeding. It has not been proved that the so-called Truby King method of percentage feeding is the best and only substitute for breast milk. This is evidenced as follows: (*a*) In the case of many babies sent out in good health, resort had to be had to breast milk to put them on the right road. (*b*) Gain in weight and general improvement which was first obtained was lost through breakdowns during the course of the treatment, and the total gain in weight was less than would otherwise have been obtained. (*c*) Some babies actually suffered in consequence of the treatment. The difficulty of ascertaining a baby's power of absorption is a vital point, for it may be found that a baby fed on an artificial food, such as cow's milk, needs to be given a higher percentage of some of the food elements because in this form he can assimilate only a certain proportion of the whole, rejecting a great deal, which is passed in the stools; whereas in the form in which the elements are presented in human milk, although in lower percentages, practically the whole may be assimilated.

Cerebral Abscess Complicating Abscess of Lung.—In Barling's case, the cerebral abscess in the occipital region was secondary to a purulent bronchiectasis. A thoracotomy was done first, and the brain operation one month afterward. The patient recovered; in fact, gained better health than he had had for years.

Abnormally Low Pulse Pressures in Neuroses.—An analysis made by the Bains of 2,000 general cases shows that 230 presented pulse pressures of 30 mm. of mercury or under. In 90 per cent. of the cases this was associated with nervous phenomena, either neurasthenia or neurosis. Return of the pulse pressure to normal was found to be an indication of improvement in the general condition. It is suggested that lack of vascular tone, causing stagnation of blood, is the most likely explanation.

Anticonsumptive Therapeusis.—Hervé is of the opinion that at present all patients with pulmonary tuberculosis in which suppuration occurs, as revealed by the ear or the screen, or even when the disease is in rapid evolution, should be subjected to a Forlanini operation. Pulmonary compression will work wonders, provided it is carried out properly. But, besides such surgical measures, the simple and fundamental methods of treatment must never be overlooked; namely, rest, open air and sunshine.

Air Embolism During Urethroscopy.—Roper's case shows that air embolism in connection with urethroscopy is a real danger and should always be borne in mind, especially in cases in which the urethroscopic tube fits tightly or when there has been hemorrhage from the urethra. It is advisable not to use the urethroscope within fourteen days of instrumentation for dilation of stricture, or when hemorrhage has taken place from the urethra after surgical intervention. Even if there has been no instrumentation at all, it is quite impossible to be sure that there may not be a small abrasion of the urethral mucous membrane through which air can be forced into the vessels.

Stain for Blood Films.—The stain used by Gordon is based on Leishman's method. In consists of eosin-methylene blue, 0.02 gm.; eosin-methylene violet, 0.02 gm., and methyl alcohol (pure for analysis), 25 c.c.

Tubercle, London

6: 161-208 (Jan.) 1925

Obliterative Pneumothorax. L. S. T. Burrell.—p. 161.
*Superficial Venules in Pulmonary Tuberculosis. A. N. Robertson.—p. 165.
Care Work in Lancashire. G. L. Cox.—p. 174.

Superficial Venules in Pulmonary Tuberculosis.—In more than 250 cases, Robertson made a diagram, which he termed a "venous diagram," of each case on admission, and as a result found that the enlarged superficial venules on the trunk are arranged, as a rule, in definite areas, and according to a plan more or less definite, although a certain number of the venules appear to be scattered in a somewhat haphazard pattern. Those on the front of the trunk can be grouped into two semicircular arches with their apex directed upward, the "sternocostal" or "costal arch" and the "diaphragmatic arch." In the former, the apex of the arch is formed by little venules over the sternum at the level of the second or third ribs or sometimes higher, while the limbs of the arch are formed by venules in line with these spreading out on each side; the farther out the venules are traced, the lower in position do they lie. As a rule, only one costal arch is present, or, sometimes, unilaterally only one half of the arch, or, perhaps, a fraction of any one part of the arch alone may be present. The diaphragmatic arch is the well known line of venules corresponding to the line of attachment of the diaphragm. Posteriorly, the venules are also arranged into two definite groups and areas: (*a*) round the seventh cervical and first and second dorsal spines, and (*b*) along the crests of the ilia. The former group has had much attention paid to it, especially as a sign of pulmonary tuberculosis in children, and is called the zone of Lombardi. The second group forms the "cristal line." Besides these definite groups, little venules may be scattered irregularly over the other anatomic areas; e. g., along the clavicles, along the spines of the scapula, in the suprasternal notch, and in the lumbar region. Also, frequently, besides these little twiglike terminal venules there is enlargment of the whole length of veins forming a superficial varix. The number of distended venules in the trunk depends on (1) age; (2) duration of disease; (3) cough; (4) fibrosis; (5) anatomic extent of disease; (6) locality of disease in the lung; (7) not reflex or trophic in cause; (8) definitely associated with pulmonary tuberculosis, and in the main due to obstruction of the vena azygos by enlarged mediastinal glands and hilum fibrosis (especially in children), although also due to general lung fibrosis strain on the pulmonary and general venous circulation.

Bulletins de la Société Médicale des Hôpitaux, Paris

49: 77-130 (Jan. 23) 1925

Multiple Sclerosis in a Syphilitic. Claude and Targowla.—p. 77.
*Osteitis Deformans in Tibia. J. Hallé and J. Decourt.—p. 85.
Aneurysm in Subclavicular Artery. Léchelle et al.—p. 90.
*Blood Transfusions in Pernicious Anemia. Emile-Weil et al.—p. 95.
*Secondary Cancer in the Heart. C. Achard and J. Mouzon.—p. 108.
Hemorrhagic Purpura in Gonorrhea. S. I. de Jong and Martin.—p. 112.
Ectasia of Pulmonary Artery with Valvular Insufficiency. C. Pezzi and S. Silingardi.—p. 117.
Abortive Forms of Malta Fever. Dargein and Doré.—p. 122.
Congenital Diaphragmatic Hernia. Sézary et al.—p. 125.

Osteitis Deformans in One Tibia.—In their case of Paget's disease in a man, aged 63, Hallé and Decourt noted local hyperemia, pigmentation, eruption and augmentation of the oscillometric index, with excessive local sweating from the pilocarpin test. They are inclined to explain the local manifestations by changes in the sympathetic system in the region of the bone lesions. Syphilis could not be incriminated in this instance.

Repeated Blood Transfusions in Pernicious Anemia.—Weil, Wall, Pollet and Lamy repeated the transfusions first every week and later twice and once a month. The transfusion was repeated when the increase in erythrocytes and in hemoglobin, from the previous transfusion, had ceased or tended to drop. Some of their twelve patients were given four or five, ten, twenty and one even twenty-eight transfusions. Three and five transfusions, of 300 c.c., induced in two patients a normal blood picture, which persists after two and three years. In seven others the treatment was followed by frequent and considerable remissions. In the four instances in which only slight improvement of short duration occurred, the anemia was explained by a probable cancer in the digestive tract.

Secondary Cancer in the Heart.—Achard and Mouzon report a case of numerous metastatic nodules, principally in the right heart, in a woman, aged 64. They believe that the intramyocardiac nodules originated from cancer emboli in the coronary artery.

Comptes Rendus de la Société de Biologie, Paris

92: 121-224 (Jan. 30) 1925. Partial Index

Action of Roentgen Rays on Tissues. J. Jolly and R. Ferroux.—p. 125.
*Behavior of Raw and Boiled Milk. N. L. Cosmovici.—p. 130.
*Goiter in Thyroid Grafts. H. and A. Cristiani.—p. 138.
Chronic Fluorin Poisoning from Food. Cristiani and Gautier.—p. 139.
The Hyperfeminization Question. A. Lipschütz and M. Tiitso.—p. 143.
*Epinephrinemia. E. Gley and A. Quinquaud.—p. 147.
*Different Behavior of Vitamins. G. Lorenzini.—p. 151.
*Action of Formaldehyd on Microbes. P. Durand.—p. 159.
*Dysentery Anatoxin. P. Lesbre and A. Verdeau.—p. 165.
*Mechanism of Muscle Contraction. Schwartz and Oschmann.—p. 169.
*Action of Roentgen Rays on Eggs. Ancel and Vintemberger.—p. 172.
*Elimination of Carbon Monoxid. M. Nicloux et al.—p. 178.
*Ossification and Decalcification. L. Blum et al.—p. 182.
Origin of Rickets. L. Blum et al.—p. 184.
Concentrated Oxygen Treatment of Asphyxia. M. Nicloux.—p. 188.
*Action of Amino-Acids. L. Brouha.—p. 204.
Biologic Titration of Pituitary Extract. C. Heymans.—p. 210.
*Action of Radium on Microbes. R. Bruynoghe and W. Mund.—p. 211.
*Ocular Tuberculosis. A. Bessemans and L. Hambresin.—p. 219.

Action of Oxalate on Coagulability of Milk.—Cosmovici affirms that the calcium ions are indispensable for coagulation of milk by rennet. Potassium oxalate prevents the coagulation of milk by combining with the calcium ions in the casein. Heat inhibits the coagulability of casein, but enhances the coagulability of lactoglobulin and lactalbumin. The action of heat and the action of oxalate on casein parallel each other, and consequently the amount of oxalate required to make milk incoagulable in presence of rennet, is twice more in the raw milk than in the boiled. Evidently the action of oxalate is antagonistic to the action of ferments, since it prevents not only the coagulation of casein, but also of the two other proteins in the milk.

Changes in Thyroid Grafts Similar to Goiter.—The Cristianis observed hypertrophy of thyroid grafts in rats, connected with a tardy appearance of a goiter in the animals. Changes in the structure of the grafts corresponded to those in the thyroid with goiter. This explains the failure of grafting in cases with a degenerated or an atrophied thyroid, and the good results obtained after removal of the diseased gland, in an otherwise normal organism.

Epinephrinemia from Irritation of Splanchnic Nerve.—Gley and Quinquaud's research on cats showed that the venous blood, drawn from the suprarenal capsules during irritation of the splanchnic nerve, manifested the properties of epinephrin, when reinjected in the same animal.

Alimentary and Isolated Vitamins.—Lorenzini submitted separately to prolonged dialysis, vegetable juices containing natural vitamins, and solutions of vitamins isolated from them. The latter passed through the dialyzing membranes rapidly and completely; the natural vitamins much more slowly. Consequently the catalytic activity, on which depends the therapeutic effect, is markedly lower in the alimentary vitamins than in the isolated.

Action of Formaldehyd on Microbes.—Durand's experiments on mice proved that the toxicity is at least three times weaker in dysentery vaccine treated with formaldehyd than when merely heated, while the immunizing power did not seem to be reduced at all. Experiments in the clinic confirmed in man this reduction in the toxicity by the formaldehyd, both for dysentery and for gonococcus vaccine. He reports excellent results with the formaldehyd-treated gonococcus vaccine in acute gonorrhea.

Dysentery Anatoxin.—A dysentery anatoxin, prepared with formaldehyd by Lesbre and Verdeau, induced in rabbits immunity against the dysentery bacillus, as well as against its toxin. It is possible that preliminary injections of an anatoxin might ward off certain morbid phenomena consecutive to vaccination by the mouth.

Mechanism of Muscular Contracture.—Schwartz and Oschmann noted in frogs, intoxicated with monobromacetic acid, that the intense muscular contracture was not accompanied by an increase in phosphoric or lactic acid. Evidently the contractures do not result from saturation of the muscle colloids with acids.

Action of Roentgen Rays on Eggs.—Ancel and Vintemberger relate that hen's eggs exposed to 25 skin units of roentgen rays showed a perfectly developed blastoderm, but no embryo had developed. The same phenomenon was observed in trout eggs exposed at the end of the segmentation period. Certain lesions from irradiation may not interfere with the development of cells into blastoderm, but prevent their further differentiation into an embryo. The failure of further differentiation proves exhaustion of the cells from the roentgen rays.

Elimination of Carbon Monoxid.—Of two dogs intoxicated with carbon monoxid, one was given air for inhalation, while the other was treated simultaneously with subcutaneous injections of oxygen. The elimination of the carbon monoxid was more rapid in the second dog. In a second pair, the elimination of carbon monoxid was more rapid in the dog that had inhaled oxygen than in the one which had inhaled air and had been given subcutaneous injections of oxygen. Inhalation of pure oxygen seemed to be much superior to either method in treatment of grave carbon monoxid poisoning. The experiments failed to confirm Henderson and Haggard's statement that inhalation of air combined with 5 per cent. of carbon dioxid is more effective than inhalation of pure oxygen for hastening elimination of carbon monoxid.

Phenomena of Ossification and Decalcification.—Blum, Delaville and Van Caulaert reiterate that formation and preservation of bone substance depend on the balance between the acids and bases, with a normal predominance of the base. Acidosis arrests ossification in periods of development, as in rickets, and causes decalcification in the already formed bones, which occurs in osteomalacia, in grave diabetes with acidosis, and also in pregnancy with acidosis. Rickets, they say, is not connected with calcium deficiency, and consequently the disease cannot be cured or improved by administration of calcium. It is due to an upset in the acid-base balance.

Action of Amino-Acids on Veins and Capillaries.—Brouha's research on frogs, cats and dogs demonstrated that the amino-

acids diminish considerably the tonus of the walls of veins, and of isolated segments of ureter, uterus and intestine. The vasodilatation induced by the amino-acids is due thus—contrary to epinephrin—to their property of reducing the tonus in the smooth muscle fibers.

Action of Radium on Microbes.—Bruynoghe and Mund assert that radium emanations inhibit in microbes the ability for division, without disturbing other vital phenomena, such as motility. Alpha and beta radiations exert also a direct action on trypanosomas in vitro, inducing lesions in the apparatus controlling cell division.

Serologic Test for Ocular Tuberculosis.—Bessemans and Hambresin applied to thirty-six patients the deviation of complement test for diagnosis of tuberculous affections of the eye. The reaction was accepted as positive only when a simultaneous Wassermann test was negative. In seventeen patients out of twenty-three, who did not reveal any tuberculous lesions elsewhere than in the eye, the fixation reaction was positive.

Gynécologie et Obstétrique, Paris

11: 1-80 (Jan.) 1925

Uterine Fibromas and Ovarian Tumors in the Elderly. L. Tixier and E. Pollosson.—p. 1.
*Puerperal Hemiplegia. A. Fruhinsholz and A. Français.—p. 13.
History of Cesarean Section. P. Gall.—p. 24.
Case of Placental Teratoma. P. Morville.—p. 29.
Treatment of Uterine Fibromyomas. H. Gromadzki.—p. 33.
*Intra-Uterine Implantation of Ovary. H. Hartmann.—p. 38.

Puerperal Hemiplegia.—Fruhinsholz and Français describe as a typical example the case of a woman, aged 23, with paralysis of the right side, aphasia, and jacksonian epilepsy, followed by recovery. Pure puerperal hemiplegia generally occurs only when the conditions have not been wholly normal, and most often in primiparas. They report one fatal case out of the twelve encountered, death resulting from pulmonary embolism, not from the cerebral hemiplegia. The coincidence (in two cases) of puerperal hemiplegia and phlebitis of the femoral vein seems especially significant.

Intra-Uterine Implantation of Ovary.—A pregnancy followed in 12 per cent. of fifty-six cases (Tuffier's twenty-nine and Estes' twenty-seven cases), and was carried to term in five instances, nearly 10 per cent. Hartmann recalls that Letulle's histologic examination in one of Tuffier's cases also established the fact of ovulation and the possibility of conception. Intra-uterine implantation of the ovary usually assures the continuation of menstruation, and allows fecundation and the possibility of full term pregnancy in a relatively important percentage of cases.

Médecine, Paris

6: 251-328 (Jan.) 1925

Ophthalmology in 1924. A. Cantonnet.—p. 251.
Treatment of Conjunctivitis. A. Chevallereau.—p. 257.
*Cause and Treatment of Glaucoma. F. Terrien.—p. 262.
Prevention of Secondary Cataract. E. Kalt.—p. 264.
Complications in Operations for Cataract. A. Monthus.—p. 269.
Double Cut Method in Operations for Cataract. Aubaret.—p. 273.
*Metastatic Ophthalmia in Children. P. Jeandelize.—p. 276.
Arterial Tension in Glaucoma. P. Bailliart.—p. 280.
Diagnosis of Traumatic Cataract. De Saint-Martin.—p. 281.
Diphtheric Bilateral Paralysis of Accommodation. F. Bourdier.—p. 285.
Otorhinolaryngology in 1924. L. Baldenweck.—p. 290.
Treatment of Chronic Maxillary Sinusitis. G. Worms.—p. 298.
The Sphenopalatine Ganglion Syndrome. R. Miégeville.—p. 303.
Perforations of Septum of the Nose. J. Rouget.—p. 307.
Tuberculosis of the Middle Ear. A. Bloch.—p. 309.
Polyps on Vocal Cords. J. Cuvillier.—p. 313.
Catarrh of Eustachian Tube. R. Gaillard.—p. 315.
Roentgenographic Diagnosis of Foreign Bodies in Bronchi. L. Levesque.—p. 320.

General Course and Treatment of Glaucoma.—Terrien states that the primary essential treatment is local, but emphasizes the need of general treatment of the underlying causes (hypertension, hypersensibility of the vegetative system, syphilis, and disturbances of the endocrine glands).

Metastatic Ophthalmia in Children.—Jeandelize says that it appears most frequently in children with cerebrospinal meningitis, influenza, pulmonary affections, or gastro-enteric disturbances. The ophthalmia often develops unsuspected and insidiously, and is particularly grave in infants.

Paris Médical

55: 113-144 (Feb. 7) 1925

*Basic Principles for Radiotherapy in Cancer. C. Regaud.—p. 113.
Improvements in Deep Radiotherapy. R. Proust and R. Coliez.—p. 126.
*Treatment with Radioactive Substances. A. Lacassagne.—p. 133.
*Cardiovascular Reactions to the Roentgen Rays. J. Lavedan.—p. 137.

Action of Irradiation on Cancer and Normal Tissues.—Regaud states that the reaction to roentgen rays is the same in cancer tissue as in the normal tissue. The susceptibility to roentgen and radium gamma rays is different in tissues formed chiefly from collagen substances, in comparison with that of tissues rich in cells. The injury from the rays in the collagen tissues involves certain vital properties, of a still unknown nature. The injury may be long latent, and may be permanent. It manifests itself by a tardy acute necrosis, from some casual cause, as from infection of the region containing the tissues thus sensitized. The epidermis-destroying lesion may be dissociated, by a certain technic, from the lesion inducing diffuse acute necrosis.

Therapeutic Effect from Alpha Rays.—Lacassagne summarizes his results from internal radiotherapy, the exclusive use of alpha rays, in different diseases. No curative effect was manifested in treatment of cancer. Notable benefit was realized in leukemia, owing to fixation of the radioactive substance in the hematopoietic tissues. The experimental increase of erythrocytes, under small doses, may justify the use of radioactive substances in anemia, especially in pernicious anemia. The most surprising action has been observed in gout, mostly from emanations. Good, but inconstant, results have been obtained in chronic joint rheumatisum, of nongonoccocal origin. No influence has been noted on diseases of the nervous system.

Cardiovascular Syndrome from Roentgen Rays.—Lavedan calls attention to the cardiovascular changes, in the pulse and in arterial pressure, occurring from a large dose of roentgen rays, applied once or repeatedly to a mass of tissues. He finds this cardiovascular syndrome to be analogous to the hemoclastic shock from the action of a poison. He believes that by distributing the dose over a larger area of surface, prolonging the duration of the irradiations, and more effectual filtration, this complication may be warded off.

Presse Médicale, Paris

33: 145-160 (Feb. 4) 1925

*Catheterization in Pyelonephritis. Lévy-Solal and Misrachi.—p. 145.
*Treatment in Spastic Paralysis. C. Ducroquet.—p. 146.

Catheterization in Pregnancy Pyelonephritis.—Lévy-Solal and Misrachi point out that there is always continuous retention of urine in pregnancy and postpartum bilateral pyelonephritis. A spontaneous recovery may occur in mild, latent cases, but otherwise prompt catheterization of the ureters is imperative. The catheter is left permanently in the ureter, and is harmless, while it wards off the danger of irreparable lesions from the distention. In a secundipara with high fever from pyelonephritis, at the eighth month of pregnancy, two catheters were introduced. The removal of the catheters, five days after defervescence, was followed by a recurrence, treated this time with a bacteriophage. This treatment caused aggravation of the general condition, subsiding again under a second catheterization. In another case of pyelonephritis postpartum, the menacing condition improved greatly after a catheterization, for four days, twice repeated.

Procedures in Treatment of Spastic Paralysis.—Ducroquet corrects with a board orthopedic apparatus the deformities from spastic paralysis in children. The apparatus allows traction on the tibiotarsal joint, and straightens the knee. The foot can be held at a right angle, the knee straightened, while the leg is in abduction. The child wears the board or lies on it several hours daily. The correction by a cast apparatus consists in fixing the foot in hyperflexion and the knee in a backward curve. The procedure may have to be repeated several times. The hip is fixed in hyperextension or abduction after cutting the adductors, or in outward rotation, when the internal rotators, tensor and gluteus medius

are shortened. Subcutaneous tenotomy is advisable, if the triceps is not paralyzed. Otherwise elongation of the tendon is indicated. Manual elongation with consecutive use of a cast should be preferred in subjects with the knee in flexion. The same procedure may be employed in retraction of the flexors of the hip. An inward rotation of the femur yields to tenotomy of the tensor, and stretching of the gluteus medius. His numerous illustrations show the exact technic and the mechanical principles involved.

33: 161-176 (Feb. 7) 1925

*Cod Liver Oil in Rickets. A. B. Marfan.—p. 161.
Pathologic Physiology of the Vegetative System. Daniélopolu.—p. 162.

Value of Cod Liver Oil in Rickets.—Marfan reports the results from his experiments with cod liver oil. Given to animals, on a phosphorus deficient diet, it prevented, or cured the disturbances resembling human rickets. Some exceptions were noted. Lesions of the osteomalacia type occurred in two white rats under cod liver-oil treatment. The action in children seemed to be less effective than in animals, and was certainly inferior to the effect of ultraviolet rays.

Policlinico, Rome

32: 113-160 (Jan. 26) 1925

Bacillus Abortus Septicemia. G. Ficai and A. Alessandrini.—p. 113.
*Relapses in Measles. G. Macciotta.—p. 116.
Treatment of Surgical Tuberculosis. O. Cignozzi.—p. 119.

Relapse in Measles.—Macciotta observed a relapse of the whole syndrome in eight children with measles. The interval was from ten days to four weeks. Signs of tuberculosis were found in almost all of the patients.

Brazil-Medico, Rio de Janeiro

1: 15-26 (Jan. 10) 1925

*Circulation of the Cerebrospinal Fluid. A. Valerio.—p. 15.
*The "Hemotonic Index." Heitor Fróes.—p. 17.
Case of Congenital Atrophy of Left Kidney. Doria.—p. 18.

Circulation of Cerebrospinal Fluid.—Valerio reviews the testimony to date for and against an actual circulation of the cerebrospinal fluid, his verdict being in favor of its being an established fact. From the fact that the subarachnoid space is always flooded with the fluid, he accepts that this serosa must produce it.

Index of Predisposition to Operative Shock.—Fróes has modified the Declairfayt quotient, and extols the dependability of the index thus obtained. He multiplies the systolic pressure (oscillometer readings) by 100, and divides the product by the hemoglobin percentage multiplied by the figure representing the hundred thousand erythrocytes. For instance, in a patient with systolic pressure of 170 mm.; erythrocytes, 3,600,000; hemoglobin, 67 per cent., the formula would be $\frac{170 \times 100}{36 \times 67} = 7$. This figure 7 seems to be the extreme limit for the normal. With any figure above this, shock is almost inevitable.

Prensa Médica, Buenos Aires

11: 769-800 (Jan. 20) 1925

*Renal Diabetes. M. R. Castex and J. J. Beretervide.—p. 769.
*Wilson's Disease. A. M. Marque and A. F. Camauer.—p. 777.
*The Duodenal Tube. M. Zinny.—p. 780.
*Recklinghausen's Disease. J. L. Carrera.—p. 787.
Action of Stains on Cells Cultivated in Vitro. A. H. Roffo.—p. 790.

Renal Diabetes.—The cause for the glycosuria in the two men whose cases are described was beyond question the chronic constipation from which both had long suffered. Under successful treatment for this, including an anticolon bacillus vaccine, the glucose disappeared from the urine. Castex and Beretervide reiterate the harmlessness of glycosuria with normal blood sugar, declaring that renal diabetes never changes into diabetes mellitus. Cases that seem to conflict with this statement have all proved to have been true mellitus from the start. They survey the literature extensively.

Wilson's Disease.—Marque and Camauer reproduce six photomicrograms to complete their report on the first case of progressive degeneration of the lenticular nucleus to be studied in Argentina. Although the Wassermann test had elicited a positive reaction, they do not incriminate syphilis directly in the origin of the striatal lesions, as there were no lesions of a syphilitic nature in this region. The liver was small and abnormally hard, but free from acute inflammation.

The Duodenal Tube.—Zinny expatiates on the advantages of nonsurgical drainage of the biliary tract by the duodenal sound, and the surpassing efficacy of magnesium sulphate as a cholagogue. It does not cause pain or disturbance of any kind. He thinks that this tends to disprove Meltzer's theory as to contraction of the gallbladder.

Recklinghausen's Disease.—In the case illustrated by Carrera, the face and trunk were studded so thick with the tumors that the skin between could scarcely be seen. The tumors had no connection with the nerves, which seemed to be entirely free. The man died suddenly at the age of 62 from perforation of an unsuspected gastric ulcer.

Revista de la Asoc. Médica Argentina, Buenos Aires

37: 105-152 (Dec.) 1924

*Pneumococcus Meningitis. M. Acuña and A. Casaubon.—p. 105.
*Spasms of Retinal Arteries. Castellanos and Urrets Zavalia.—p. 118.
Pyonephrosis from Calculi in Boy. Beretervide and Pozzo.—p. 126.
*Peritoneal Reaction to Spinal Cord Disease. M. Moreno.—p. 138.

Pneumococcus Meningitis in Children.—Acuña and Casaubon relate that the meningitis proved rapidly fatal in all of their nine cases, nothwithstanding intensive serotherapy. The ages ranged from 40 days to 14 years. In a total of twenty collected cases, the death rate was 92 per cent. In Morquio's two cases with a favorable outcome, no serotherapy had been given. In their personal cases there had been a delay of five to nine days before the diagnosis had been certain and the serotherapy begun. There are no symptoms differentiating the pneumococcal origin of primary acute meningitis. In two cases trauma of the skull had evidently favored the invasion of the meninges from a pneumococcus bacteremia originating in the knee or elsewhere.

Spasms of Retinal and Peripheral Arteries.—A girl of 16 had been having for some time transient attacks of loss of vision in the left eye, lasting for a few seconds up to five minutes and recurring at intervals of four to ten days. Finally, one branch of the retinal artery was seen to be totally obstructed, and vision has been correspondingly impaired. Two years later the sound mate developed the same recurring spasms, but they are aborted each time with amyl nitrite, while vigorous treatment for the inherited syphilis aims to reduce the predisposition. The case teaches the necessity for suspecting syphilis and pushing treatment in all such cases of spasms of the retinal or peripheral arteries. Trinitrin and atropin might be used; the latter might even be injected into the orbit.

Peritoneal Reaction in Disease of the Spinal Cord.—In Moreno's case of acute paralysis of the intestine and bladder, vomiting and stiffening of the abdominal wall, an exploratory laparotomy proved negative, and the course of the case revealed acute myelitis. It had developed without local symptoms, the peritoneal reaction alone attracting attention. In a second, similar case, a wound in the chest explained the clinical picture, from secondary injury of the spinal cord. He adds that there are no means for distinguishing the pain and rigidity in this spinal cord peritonism from those with true peritonitis. A very rapid onset of paralysis of the bladder should suggest a possible myelitic origin.

37: 301-342, 1924. Biology Section

Purification of Smallpox Vaccine. Carbonell et al.—p. 301.
*Sedimentation of Typhoid Bacilli in Water. De la Barrera.—p. 307.
The Sphincter Function of the Ileocecal Valve.—Brouca.—p. 315.
*Reflex Secretion of Epinephrin. Houssay and Molinelli.—p. 327.

Sedimentation of Typhoid Bacilli in Water.—De la Barrera adds killed typhoid bacilli to the water before applying the usual tests and antityphoid serum to induce agglutination. The agglutination proceeds much more rapidly and completely on account of the dead bacilli increasing the bulk of agglutinable bodies.

Reflex Secretion of Epinephrin.—A previous report of similar research was summarized recently on page 2050, Dec. 20, 1924.

37: 153-187, 1924. Urology Section

Electric Osmosis in Treatment of Bladder Tumors. Astraldi.—p. 153.
Chronic Gonococcal Prostatitis. C. M. Matta.—p. 160.
Nephrectomy for Epithelioma. J. Salleras.—p. 170.
Cystic Degeneration of Epididymis. Idem.—p. 179.
Iodized Oil Not Suited for Pyelography. Astraldi and Lanari.—p. 183.

37: 209-286, 1924. Internal Medicine Section

Artificial Pneumothorax on Both Sides in Turn. Bergmann.—p. 209.
Spontaneous Cure of Pneumothorax. Navarro and Beretervide.—p. 232.
*Sign of Adhesions in Liver-Duodenum Region. R. Novaro and M. Bermudez Zolezzi.—p. 243.
Iodized Oil as a Contrast Suspension. Saralegui.—p. 270.
Phenolsulphonephthalein Test of Kidney Function. Izzo.—p. 278.

Sign of Adhesions in the "Infrahepatic Crossroads."—Novaro and Bermudez Zolezzi give an illustrated description of a number of cases of periduodenitis and pericholecystitis, gallstones, etc., in which the persistence of symptoms was explained by adhesions. With the patient reclining on his back, they palpate the region between the duodenum and the gallbladder. When the tenderest point is found, holding it with the fingers, the patient is turned on the left side. Gentle pressure then at this point induces sudden intense pain, while even strong pressure causes no pain if the patient is turned on the right side.

Semana Médica, Buenos Aires

1: 1-60 (Jan. 1) 1925

Pathologic Anatomy of Organ of Hearing. R. Podestá.—p. 2.
*Serotherapy in Syphilis. F. Jauregui y L. Lancelotti.—p. 9.
Ileus in Young Infant. C. Lagos García and A. Grosso.—p. 15.
Sigmoiditis with Perforation. A. J. Pavlovsky.—p. 18.
Filariasis in Tucumán. Committee Report.—p. 21.
State Department for Increasing the Birth Rate. J. Dellepiane Rawson.—p. 29.
By-Effects from Bismuth in Treatment of Syphilis. A. M. Sierra.—p. 30.
*Mercuric Chlorid Poisoning. P. B. Aquino.—p. 33.
A Derivative of Methylene Blue for Treatment of Tuberculosis. O. P. Curti.—p. 34.
*Adhesive Pericarditis. J. J. Spangenberg.—p. 37.
*Ayerza's Disease. L. Ayerza.—p. 43.
*Ether in Treatment of Pneumonia. J. J. Darnet.—p. 44.
Orcin in Tests for Malic Acid. S. A. Celsi.—p. 46.
Resurrection of Humoral Theory. A. Lumière.—p. 47.

Serotherapy of Syphilis.—This article was summarized, Jan. 24, 1925, p. 319, when published in a French journal.

Treatment of Mercuric Chlorid Poisoning.—The young man recovered after the usual measures had been supplemented with a turpentine fixation abscess. The influence of this "leukocyte blood-letting," as Aquino calls it, was speedily apparent in the general condition, and the albumin in the urine soon dropped from 0.65 per cent. to traces.

Adhesive Pericarditis.—The benefit from resection of ribs was pronounced in Spangenberg's patient, a young man with rheumatic pancarditis. The Brauer operation relieved him permanently of his dyspnea, insomnia and vomiting, and medicinal control of the other heart symptoms then became possible for the first time.

Secondary Sclerosis of Pulmonary Artery.—Ayerza lists the bibliography on Ayerza's disease, the "black cardiacs."

Injections of Ether in Pneumonia in Children.—Darnet has applied intramuscular injections of 1.5 to 3 c.c. of ether in seventeen children with bronchopneumonia and twenty-eight with bronchitis. He regards the results as decidedly encouraging for this treatment, which amplifies the respiratory movements, while the elimination of the ether by the respiratory mucosa serves as a local anesthetic, and the ether aids in rendering the bronchial secretion more fluid. Four of the forty-five children died, all very young infants; two were practically moribund when first seen. There were a number of infants among the recoveries. He is confident that the ether helped to ward off pneumonia later in some of the infants with bronchitis.

Deutsche medizinische Wochenschrift, Berlin

51: 133-174 (Jan. 23) 1925

*Haff Disease. L. Lewin.—p. 133.
*Acute Suppurations. M. Martens.—p. 134.
*Recurrens Strains. W. A. Collier.—p. 137.
*Bladder Content and Kidney Function. H. Boeminghaus.—p. 138.
*Treatment of Ulcers. B. O. Pribram.—p. 141.
*Psychiatric View on Psychanalysis. Birnbaum.—p. 142. Conc'n.
*Fetal Placenta Reaction. Lüttge and Mertz.—p. 143.
*Lack of Appetite in Children. S. Wolff.—p. 145.
Urea Determination. Grifols y Roig and Helmholz.—p. 146.
"Action of Tuberculin." Curschmann.—p. 147. Reply. Rieckenberg.—p. 147.
Constitution of Sinigrin. F. Wrede.—p. 148.
*Comparative Hematology. S. Meyer.—p. 149.
Surgery on Children. W. Kausch.—p. 150. Cont'n.
Occult Bleeding. F. Joseph.—p. 150.
*The Ovaries, Serum Calcium and Osteomalacia. A. Alker.—p. 151.
Steinach's Operation. R. F. Weiss.—p. 152.
Masks Against Droplet Infection. A. Hartmann.—p. 154.
Progress in Ophthalmology. Triebenstein.—p. 154.
Infant Mortality in the Hansa Cities. Klotz.—p. 156. Cont'd.
Tuberculous Sanatoriums and Social Insurance. Sachs.—p. 157.
Medical Education in France. S. Warschawski.—p. 158.
Perthes' Disease. Kehl.—p. 169.
Medical Impressions of America. Finkelstein.—p. 171.

Haff Disease.—Lewin reports on the method by which he came to the conclusion that the Haff disease must be due to poisoning with a volatile arsenical compound. The oxyhemoglobin of the blood and urine of the patients displayed a remarkable resistance to reduction by ammonium sulphid. The urine did not decompose.

Acute Suppurations.—Martens regards skeptically all the nonsurgical methods of treatment of furuncles and cellulitis, especially chemotherapy and serotherapy. He opens the abscess early and wide.

Recurrens Strains.—Collier's strain of human recurrens spirochetes was transmitted from mouse to mouse for twelve years. It remained virulent—which is exceptional—for man. The virulence for mice increased suddenly while the strain became ineffective for man. Its resistance to arsenic remained unchanged. Cultures of the strain remained pathogenic for man.

Bladder Content and Kidney Function.—Boeminghaus observed a decrease in diuresis in dogs after distention of the bladder. The phenomenon is not due to stasis in the kidneys: The same results were obtained in dogs with ureter fistulas. This vesicorenal reflex seems to be present even with a moderate pressure in the bladder.

Treatment of Ulcers.—Pribram had 50-70 per cent. of good results in treatment of gastric and duodenal ulcers with protein injections. Ulcers of the lesser curvature—including the penetrating form—gave the best results. Some recurrences were observed in about four months after the treatment, but yielded to a new course. He gives ten intravenous injections in increasing doses, two or three days apart, and repeats the series, eventually, after from four to six weeks. A distinct reaction is a condition for success. Acute or subacute tuberculosis is a strict contraindication. Repeated duodenal hemorrhages require surgical intervention—if possible, resection. The reflex zone of the antrum should be removed in resections.

Psychiatric View on Psychanalysis.—Birnbaum concludes his survey of psychanalysis from the viewpoint of a psychiatrist. With certain critical reservations, he accepts practically all of its fundamental methods and results.

Fetal Placenta Reaction.—Lüttge and Mertz found antiplacenta ferments in the blood of the new-born and in the amniotic fluid. They believe that the ferments are produced by an internal secretion of the placenta.

Lack of Appetite in Children.—Wolff begins the treatment of underweight children with lack of appetite—some of them suffering from occult tuberculosis—by at least four days of fasting. Only tea on the first day. Then 1-3 spoonfuls of milk and some water five or six times daily on the following days. He had more difficulty to maintain this preparatory fasting than with the subsequent feeding.

Comparative Hematology.—Meyer found that dogs, cattle, horses, rabbits, mice, and poultry react hematologically to infections in about the same way as man.

The Ovaries, Serum Calcium and Osteomalacia.—Alker reports two instances of a high blood calcium level in women with signs of osteomalacia. The patients improved after injections of an extract from the pineal gland.

Deutsches Archiv für klinische Medizin, Leipzig

146: 1-144 (Jan.) 1925

*The Hemolytic Constitution. M. Gänsslen et al.—p. 1.
Diuresis and Diuretics. B. Stuber and A. Nathansohn.—p. 47.
*Acid-Alkali Balance in Acidosis. G. Endres.—p. 51.
*Respiration in Emphysema. H. Beitzke.—p. 91.
Plethysmography in Cardiovascular Diseases. A. Tur and G. Lang.—p. 102.
*Tension of Arterial Wall. A. Müller.—p. 118.

The Hemolytic Constitution.—Gänsslen, Zipperlen and Schüz made an extensive research on hemolytic jaundice and examined many supposedly healthy members of the families. Slight changes (aniso-microcytosis, lowered osmotic resistance, urobilinuria), were found quite frequently on repeated examinations of those subjects who transmit the disease. These extremely light forms account for the common assumption of recessive heredity. In reality it is dominant, and frequently associated with other constitutional anomalies (steeple skull, polydactylism, cataract, squint, and endocrine disturbances). Gallstones are almost the rule. They do not believe in an acquired hemolytic jaundice. It is only a provoked attack in a latent predisposition. The blood from the splenic vein contains less blood platelets and much more bilirubin than the blood from other veins. The osmotic resistance of the erythrocytes is not constant in the same individual.

Acid-Alkali Balance in Acidosis.—Endres made an extensive study on eighteen patients with diabetic acidosis. The formation of acetone bodies does not always cause disturbances of the acid-alkali balance. The carbon dioxid tension in the alveolar air, the curves of saturation of carbon dioxid and the hydrogen ion concentration of the blood may be within the normal limits. The body is able to compensate a large decrease in the alkali reserve by regulating the pulmonary ventilation. It seems that the limits of the p_H of blood compatible with life are at 7.00-6.94. Neither alkali nor insulin can help when this stage is reached. He observed, contrary to others, an increase of the alveolar carbon dioxid tension in a deep coma. He attributes it to a paralysis of the central regulation of respiration.

Respiration in Emphysema.—Beitzke examined the lungs in emphysema. While the bronchioles of the third order are suddenly widened when subdividing into the alveolar ducts in normal persons, the emphysematous bronchiole dilates gradually (like a funnel). He confirmed on Dreser's model that this impairs considerably the exchange of the inspired air for the alveolar air, and accounts for the beneficial action of pure oxygen, which diffuses in spite of the mechanical difficulty.

Tension of Arterial Wall.—Müller confirmed by direct determination of the venous pressure the correct basis of de Vries-Reilingh's estimation of the tension of the arterial wall. It averaged 12 mm. mercury in healthy subjects, and 22 mm. in hypertension. Arteriosclerosis without hypertension gave normal figures.

Klinische Wochenschrift, Berlin

4: 145-192 (Jan. 22) 1925

*Surgery of Nephritis. F. Volhard.—p. 145.
*Theory of Insulin Action. V. Laufberger.—p. 151.
Endocarditis. R. Stern.—p. 154.
*Respiratory Metabolism. P. Liebesny.—p. 156.
*Diabetic Metabolism in Complications. M. Rosenberg.—p. 159.
*Sugar and Gastric Secretion. W. Weitz.—p. 162.
*Digestive Insufficiency. H. Mautner.—p. 164.
Haff Disease. F. Paul.—p. 166.
*Habitus in Maniac Women. F. E. Flügel and A. O. Henckel.—p. 167.
*Insulin and Galvanic Irritability. K. Waltner.—p. 168.
*Tumor of Frontal Lobe. A. von Sarbó.—p. 168.
Arthrodesis. A. Stoffel.—p. 170.
Prima Vista Diagnoses. A. Pick.—p. 174. Conc'n.
Chemistry of Cancer Patients. H. Kahn.—p. 178. Conc'n, p. 222.
*Homeopathy and Pharmacology. W. Heubner.—p. 190.
Action of Peptone in Hemoptysis. H. Pollitzer and E. Stolz.—p. 191.
Comparison of Procain Solutions. Bijlsma.—p. 191.

Surgery of Nephritis.—More nephritis patients could be cured, according to Volhard's opinion, if the practitioners had as much respect for internal medicine as they have for surgery. Surgical intervention does not help in necrotic nephritis (mercuric chlorid), nor in the purely degenerative nephrosis. Decapsulation has many successes to its credit in hematuria, nephritis dolorosa and embolic nephritis. He saw a cure of disseminated abscesses of the kidney. Eclamptic symptoms are no indication for surgical intervention since they can be prevented or cured by rational internal treatment. The real danger is retention of urine. He advises to operate after three days—not sooner and not later—of anuria or extreme oliguria which does not yield to fasting and thirst treatment. He would also consider decapsulation when a nephritis with increased blood pressure persists for more than four weeks of—as he emphasizes—rational treatment. The roentgen rays seem to be a serious rival of decapsulation in anuria. It is possible that all these interventions are only a form of nonspecific protein therapy.

Theory of Insulin Action.—Laufberger shortened the life of rabbits poisoned with insulin by forcing them to run. Frogs kept for fourteen hours daily at a temperature of 24 C. died within four days when injected daily with one tenth of the dose necessary for a rabbit. Frogs kept in a cool room showed no disturbance after twenty days, but died in about three hours when brought into a warm room. The increased amount of lactic acid in the blood depends on the exertion and not on the action of insulin. The phenomenon can be demonstrated also on isolated extremities of an animal. Insulin does not inhibit the formation of glycogen from glucose and dioxyacetone. It prevents the change of proteins and fats into glucose. The respiratory quotient after ingestion of a mixture of alcohol and glucose is not influenced by insulin. This indicates that it does not enhance the oxidation of sugar. The increased utilization of sugar by the surviving heart and the increased respiration of tissues after insulin are admitted. Yet he points out that other substances—especially other hormones—produce the same effect in isolated tissues. The really specific action of insulin can be observed only on the whole organism. No proof of an increased cleavage of carbohydrates in the intact organism by insulin has been presented. Its inhibiting action on the new formation of carbohydrates from other substances is, in his opinion, the essence of its action.

Respiratory Metabolism.—Liebesny determined the oxygen intake before and after a meal in patients with disturbances of the sex glands. Most of them had a lowered basal metabolism and an increased specific dynamic action of the food. This syndrome speaks for a primary affection of the sex glands and secondary hyperfunction of the pituitary. Primary affections of the pituitary decrease the specific dynamic action. He points out, however, that the metabolism was changed in a similar way in some patients without any indication of disturbance of gonads or pituitary.

Diabetic Metabolism in Complications.—Rosenberg reports the history of four diabetics. Their sugar tolerance increased and the acidosis disappeared or was much reduced in three of them during the development of tuberculosis, and of an empyema in the fourth. A reduction of the body weight cannot explain the phenomenon.

Sugar and Gastric Secretion.—Weitz confirms Schüle's results by fractioned examinations of stomach contents: Sugar may retard the high degrees of acidity if used in high concentrations. The action of diluted solutions does not differ much from that of water.

Digestive Insufficiency.—Mautner reports the history of a boy with the Herter-Heubner digestive insufficiency ("intestinal infantilism"; "coeliac disease"). The child had developed well except for a transitory acetonuric syndrome until he was 1 year old. His weight decreased after this. He had surprisingly voluminous grayish stools in spite of lack of appetite. The stool contained bile pigments and ingestion of pancreas preparations was of no therapeutic use. He weighed 10,760 gm. when 16 months old and 9,600 two years later. Protein therapy gave transitory results; thyroid caused a dangerous loss in weight and weakness. Treatment with extract of the posterior pituitary, given for nine days, caused a great improvement which lasted for four months. Then a relapse occurred, against which all measures proved futile. Necropsy revealed extreme fatty infiltration of the liver and

pancreas. The acini of the latter were atrophied. This might have been secondary—similar to the changes observed in war edema.

Habitus in Maniac Women.—Flügel and Henckel found the pycnic habitus less frequent in manic-depressive women than in men. This was especially striking in patients in whom the disease had begun after the fiftieth year of age.

Insulin and Galvanic Irritability.—Waltner found that insulin lowers the threshold of response of muscles to galvanic stimuli.

Tumor of Frontal Lobe.—Sarbó's patient had headaches, loss of spontaneity, and other signs of an affection of the left frontal lobe. Later on a tendency to fall backward appeared. Ataxia followed. He attributed the latter symptom to extension of a frontal gliasarcoma to the nucleus ruber, which was found at necropsy. He believes that Bruns' frontal ataxia is always due to a lesion of the nucleus ruber.

Homeopathy and Pharmacology.—Heubner deplores the recent publication of a paper by a homeopath in a reputable pharmaceutic journal, the *Pharmazeutische Zeitung*.

Medizinische Klinik, Berlin

21: 115-152 (Jan. 25) 1925

Treatment of Helminthiasis in Children. H. Brüning.—p. 115.
Protein Therapy in Tuberculosis. J. Sorgo.—p. 118. Conc'n.
Serodiagnosis and Activity Diagnosis in Tuberculosis. F. Klemperer and A. Salomon.—p. 121.
*Blood Cyst in the Neck. H. Finsterer.—p. 124.
Connection Between the Kidney Insufficiency and the Blood Changes in Glomerular Nephritis. O. Klein.—p. 125.
Etiology of Scoliosis. E. Falk.—p. 127.
*Operative Treatment of Spondylitis. E. Schepelmann.—p. 129.
Generalized Erysipeloid in Man. H. Sieben.—p. 129.
Epinephrin in Treatment of Glaucoma. A. Eppenstein.—p. 130.
Death from Beta Naphthol Treatment of Scabies. M. Gumpert.—p. 131.
Umbilical Cord Injections in Treatment of Asphyxia of the New-Born. J. Lejbowitsch.—p. 131.
Iron in Treatment of Insidious Chronic Sepsis. E. Mester.—p. 132.
*Meinicke Microtest for Syphilis. E. Meinicke.—p. 132.
Recent Works on Surgery. E. Nordmann.—p. 137.

Case of Blood Cyst on Neck.—Finsterer describes a case of hemangioma on the neck in a woman, aged 28. The operation showed that the blood cyst, situated below the bifurcation of the carotid, was connected by a 2 cm. long pedicle with the internal jugular vein. The hemangioma may have originated from a double internal jugular vein. Removal of such cysts is the most rational treatment. As an exceptional case, is mentioned the permanent cure of a fist-sized blood cyst in an infant, aged 4 months, realized by systematic pressure.

Bone Implant in Treatment of Spondylitis.—Schepelmann takes the bone graft from the crest of the ilium for the Albee implant.

Meinicke Microtest for Syphilis in Children.—Meinicke affirms that the Meinicke microreaction is a reliable and easy method for diagnosis of syphilis. The test requires a minimal amount of blood, and consequently may be employed in very young children.

Münchener medizinische Wochenschrift, Munich

72: 119-164 (Jan. 23) 1925

*Fractures of Neck of Femur. A. Fromme.—p. 119.
*Avitaminosis of Pigeons. S. Gräff.—p. 122.
*Skin Tests in Extensive Lichen. E. F. Müller.—p. 125.
*Constitution and Labor. A. Mayer.—p. 126.
Köhler's Disease. K. Bragard.—p. 127.
*Treatment of Arsphenamin Infiltrates. F. Dietel.—p. 128.
Improved Gastroscope. R. Korbsch.—p. 129.
*Ligation of Splenic Artery. J. Volkmann.—p. 129.
*Green Stomach Contents in Benign Stenosis. G. Brdiczka.—p. 130.
Orthopedic Shoe Appliances. Zur Verth.—p. 131.
*Thyrotoxicosis from Iodized Salt. A. Viessmann.—p. 131.
Gymnastics in Weaklings. O. Wiese.—p. 132.
Amputation and Its Orthopedic Treatment. H. v. Renesse.—p. 134.
Liability in New Operations. Schiedermair.—p. 135.
Expert Testimony in Gynecologic Affections. Weber.—p. 136.
Medicine in Era of Materialism. G. Honigmann.—p. 138.

Fractures of Neck of Femur.—Fromme admits that little progress has been made in the treatment of these fractures in the hundred years since Cooper. The regular course of treatment is impossible in about 25 to 50 per cent. of the medial fractures. This applies especially to very old people. Plaster casts for at least three months are the best conservative treatment. The value of primary removal of the head of the femur is worth investigating.

Avitaminosis of Pigeons.—Gräff found an increased hydrogen ion concentration (down to a p_H of 6.1) in the brain of avitaminotic pigeons that had presented opisthotonus. Fasting increases the alkalinity of the brain (p_H 7.5). The synthesis of indophenol-blue in an emulsion of brain tissue was retarded in the first group. Poisoning by potassium cyanid increases the acidity of the brain too, but the retardation of the indophenol blue synthesis was in no way parallel to it.

Skin Tests in Extensive Lichen.—Müller found no leukopenia after intracutaneous injections in a skin affected with extensive lichen. He believes that the centripetal pathways of the reflex were interrupted.

The Constitution from the Obstetric Standpoint.—Mayer believes in a familial predisposition of certain women for having male or female progeny. Primary weakness of labor pains recurs frequently in the same woman, or even in her whole family. Premature rupture of the membranes, varices and postpartum hemorrhages also seem to depend on constitutional differences. The instances of death of several sisters in labor should make us reflect on the possible constitutional cause. We might distinguish between eutocic and dystocic families.

Treatment of Arsphenamin Infiltrates.—In the not infrequent mishaps in injecting arsphenamin into the tissues, Dietel aspirates as much of the injected arsphenamin as possible, and immediately injects a large amount of physiologic sodium chlorid solution in and around the infiltrate.

Ligation of Splenic Artery.—Volkmann reports ligation of the splenic artery in a woman with pernicious anemia. The erythrocytes decreased to one half of the number before the operation, the patient felt better, and died the seventeenth day. He concludes that the ligation procedure is technically not as difficult as it looks. He mentions the possibility that the patient might have died anyway.

Green Stomach Contents in Benign Stenosis.—Brdiczka obtained a green stomach content in a patient with benign grave stenosis of the pylorus. He does not believe that it was due to bile. He cultivated from the contents a yellow sarcina strain, which colored the medium green.

Thyrotoxicosis from Iodized Salt.—Viessmann reports a thyrotoxicosis in a woman with a goiter who used a proprietary iodized salt for cooking. Its iodin content was too high (1 mg. iodin per 10 gm. of salt).

Wiener klinische Wochenschrift, Vienna

38: 85-110 (Jan. 15) 1925

Early Intervention in Peritonsillitis. F. Hutter.—p. 85.
Chronic Metastatic Ophthalmia. W. Gilbert.—p. 87.
*Zoster and Febrile Herpes. B. Lipschütz.—p. 89.
Danger from Manual Delivery of Placenta. H. Katz.—p. 90.
The Roentgen-Ray Treatment Question. K. Staunig.—p. 92.
*Antipyrin in Local Treatment of Sciatica. F. Högler.—p. 94.
Mushroom Poisoning. E. Kratzeisen.—p. 96.
Pathogenesis of Rickets. A. v. Bosanyi.—p. 97. Conc'n.
Treatment of Garbuncle on the Neck. W. Goldschmidt.—p. 99.
Surgical Treatment in Pulmonary Affections. H. Schlesinger. Supplement, pp. 1-12.

Zoster and Febrile Herpes.—Lipschütz' conclusion from extensive study of herpes is that zoster and febrile herpes, from the etiologic standpoint, are different infectious diseases. Hence he suggests to call the former merely "zoster," dropping the "herpes."

Perineural Injections of Antipyrin in Sciatica.—Högler obtained good results from perineural injections of antipyrin in grave cases of sciatica. Injections of 10 c.c. of distilled water, with 4 gm. of antipyrin and a little procain, relieved the pain in some instances after failure of all other methods. He describes his technic with which, he affirms, all complications can be avoided.

38: 111-134 (Jan. 22) 1925

*Sex Phenomena and Otosclerosis. C. Stein.—p. 111. Conc'n, p. 136.
*The Pelvis in Eunuchoid Acromegaly. G. B. Gruber.—p. 114.
*Arsphenamin and Calcium in Pulmonary Affections. E. Pick.—p. 118.
*Aortic Aneurysm with Paralysis. E. Duftschmid.—p. 119.

*Cholesterol and Gallstones. K. Engel and S. Cserna.—p. 123.
Case of Syphilis of the Bladder. E. Barabas.—p. 123.
The Circulation in Acute Infections. A. Fischer.—p. 124.
Survey on Tuberculosis. M. Weisz.—p. 126.
So-Called Chronic Appendicitis. J. Schnitzler. Supplement, pp. 1-24.

Sex Phenomena and Otosclerosis.—Stein's data from 125 otosclerosis patients demonstrate the great influence of the various phases of sex development on otosclerosis. The prognosis is especially bad in a marked general "status degenerativus." Functional sexual disturbances (coitus interruptus, frigidity, etc.) also have an unfavorable influence on otosclerosis, and should be heeded in treatment.

The Pelvis in Eunuchoid Acromegaly.—The proportions of the pelvis of the tall eunuchoid man with acromegaly were puerile, but the size was large.

Arsphenamin and Calcium in Pulmonary Affections.—Pick reports good results in treatment of one patient with gangrene of the lung and two with grave pneumonia. He gave one or more injections of 0.15-0.30 gm. of neo-arsphenamin in 5-10 c.c. of a 10 per cent. solution of calcium chlorid. One patient with pulmonary gangrene, treated with arsphenamin alone, died.

Aortic Aneurysm with Paralysis.—Duftschmid's patient died with symptoms of apoplexy. They were probably due to compression of vessels supplying the head and extremities, by a dissecting aneurysm reaching from the valves of the aorta to its division.

Cholesterol and Gallstones.—Engel and Cserna injected for months an emulsion of cholesterol into the peritoneal cavity of a few rabbits. No gallstones were observed.

Zentralblatt für Chirurgie, Leipzig

52: 225-288 (Jan. 31) 1925

Removal of Postoperative Occipital Cyst. K. Scheele.—p. 227.
Operative Treatment of Kidney Calculi. Fink-Finkenheim.—p. 229.
Mesasigmoid and Mesasigmoiditis. I. Perlmann.—p. 230.
*Intraperitoneal Blood Infusion. F. Klinge.—p. 233.
Modification of Intestinal Suture. Swjatuchin.—p. 235.
*Functional Disturbances After Gastro-Enterostomy. B. O. Pribram.—p. 238.
Ileus Mortality. C. Prima.—p. 241.
"Two Stage Resection of Duodenal Ulcer." W. Burk.—p. 244.
"Bone Segmentation for Rachitic Curvature." H. Strauss.—p. 245.

Intraperitoneal Blood Infusion in Man.—Klinge states that the effect depends less on the increased quantity of blood than on the strong chemical biologic stimulus, which follows quickly because of the great absorbing power of the peritoneum and the large peritoneal surface affected. This manner of absorption has the further advantages that the blood is assimilated before it enters the blood stream and that the danger from coagulation is avoided. Citrates are not needed. A long and strong cannula was used, and the intraperitoneal injection (10 to 30 c.c. and more) was made between the navel and the symphysis, after bladder and rectum had been emptied. Klinge has used the method twice in pernicious anemia. In the first case, in a man, aged about 60, without supplementary treatment, a steady improvement appeared within two weeks, lasting about a year; part of the time the patient could work. In the second case, in a man, aged about 45, the intraperitoneal injection of 10 c.c. resulted in a transient subjective improvement. Although both cases were fatal, the remission of a year seems worthy of note.

Functional Disturbances After Gastro-Enterostomy.—Pribram rejects Schünemann's view that they are due to errors in technic. He finds such sequels to gastro-enterostomy the world over and agrees with Orth that the cause is error in determining the indications. A perfectly located and properly functioning gastrojejunum opening may induce symptoms which subside on closing it. Gastro-enterostomy in a low sagging stomach may entail grave and immediate gastric disturbances, which are often more serious than those from the original ulcer. A definite distinction must be made between a stomach with true ptosis and an ulcer stomach stretching secondarily. Gastro-enterostomy is contraindicated with bleeding ulcers. The greater the anatomic changes, the safer the gastro-enterostomy as regards later functional disturbances. Good results are almost always obtained in old cicatricial pyloric stenoses with much dilatation. Gastro-enterostomy made for its original purpose remains one of the most successful of operations. It is a problem, not of technic, but of the indications for it.

Zentralblatt für Gynäkologie, Leipzig

49: 225-288 (Jan. 31) 1925

*Sinus Thrombosis in Puerperium. W. Zangemeister.—p. 225.
Etiology of Sterility. A. Greil.—p. 227.
*Periarterial Sympathectomy in Gynecology. H. H. Schmid.—p. 236.
Postoperative Influence of Preliminary Irradiation in Cancer of Cervix. W. Fürst.—p. 247.
"Intra-Uterine Transplantation of the Ovary in Sterility." P. Gellert.—p. 260.
Intravenous Ether Anesthesia in Ruptured Tubal Pregnancy. E. Eick.—p. 265.
Extraperitoneal Vaginal "Small" Cesarean Section. D. v. Ott.—p. 268.
Treatment of Dysmenorrhea. R. Mandelbaum.—p. 271.
*Treatment of Placenta Praevia. G. Conrad.—p. 275.

Sinus Thrombosis Simulating Eclampsia in Puerperium.—Zangemeister reports two cases, with fatal outcome, one in a primipara the fourteenth day after a normal pregnancy and labor, the other in a secundipara with typical eclampsia in both deliveries. The suggestion in the second instance of a possible connection between the preceding eclampsia and the sinus thrombosis is contradicted by the literature, in which apparently no case of eclampsia with sinus thrombosis has been reported.

Periarterial Sympathectomy in Gynecology.—Schmid says that a beneficial effect may theoretically be expected where an increased blood supply is desired, and enumerates a number of conditions for which a permanent hyperemia would be indicated: genital hypoplasia; chronic inflammatory adnexitis; in connection with the Wertheim operation if the patient's condition allows, and in disturbances of probable trophic origin. The effect on spastic conditions in the genitals is questionable. His experiments on rabbits and dogs have proved the applicability of arterial decortication in gynecology. He has studied the intervention experimentally on cadavers. The determination of the indications offers greater difficulty than the technic, and he warns against operation without the strictest indications. For the present at least, periarterial sympathectomy on the hypogastric artery will probably be made only when an abdominal operation is indicated for other reasons. Until some drug is found able to produce an isolated permanent hyperemia in the true pelvis, arterial decortication will have its place as one of the chief means to this end.

Treatment of Placenta Praevia.—Conrad presents statistics on 203 cases (0.97 per cent. of about 21,000 births from 1906 to 1924) with 20.2 per cent. of the cases in primiparas; 16.7 per cent. in secundiparas, and the highest percentage, 21.6, in patients with three deliveries. Of the 209 infants, 54 per cent. died. The maternal mortality was 8.8 per cent. In the fifty-one cesarean sections, five mothers and five infants died; in the three transperitoneal cervical cesarean sections, no deaths occurred. He emphasizes the need of impressing on practitioners and students that the cesarean operation is the best treatment in placenta praevia for both mother and infant. If every placenta praevia patient is sent to the hospital at once, before grave loss of blood and without infection, and the fetus still living, far better results than hitherto can be attained for both mother and infant.

49: 289-336 (Feb. 7) 1925

"Salpingography" for Determining Patency of Fallopian Tubes. F. Schober.—p. 289.
Experimental Implantation of Tube in Uterus. H. Anspach.—p. 294.
Manual Intervention in Pelvic Presentations. E. Frey.—p. 298.
Tamponade of Vagina and Uterine Cavity. F. Heinlein.—p. 305.
Treatment of Leukorrhea with Pancreatic Enzymes. Niedermeyer.—p. 309.
*Bases for Constitutional Types. B. Aschner.—p. 311.
Unusual Findings in Walls of Hernial Sac. H. E. Scheyer.—p. 315.
Technic for Drainage of Douglas' Pouch. E. W. Hohenlobbese.—p. 319.
*Hemorrhagic Diathesis in Obstetrics. V. Ohnesorge.—p. 319.

Bases for the Constitutional Types.—Aschner says that the constitution cannot be considered only morphologically but must also be judged according to chemical functions, which is the real idea of humoral pathology. A turning point has been reached in the development of medicine where progress is possible only by bridging the gap between the

old classic humoral pathology and the present technical age. The bridge is already passable and leads into new, therapeutically fruitful domains.

Hemorrhagic Diathesis in Obstetrics: Case of Transient Thrombopenia.—Ohnesorge describes the case of a previously normal secundipara, aged 38, with a hemorrhagic diathesis toward the end of pregnancy (complicated by death of the fetus) and grave hemorrhages intra partum, compelling hysterectomy. Hematologic examination revealed a marked thrombopenia, presumably due to an intoxication, possibly from the dead fetus. Syphilis was not present. The secondary, transitory thrombopenia retrogressed soon after labor, and with the increase in the number of blood platelets the phenomena of the hemorrhagic diathesis disappeared. He suggests further investigation on how far obstetrical cases of a hemorrhagic diathesis are connected with thrombopenia, with special attention to cases in which the liability to hemorrhage had first developed during the pregnancy.

Casopis lekaruv ceskych, Prague

64: 121-160 (Jan. 24) 1925

*Diagnosis of Rhinoscleroma. E. Soukup.—p. 121.
Prevention of Blindness. Z. Bruckner.—p. 123. Cont'd.
*Diverticula of the Digestive Tract. A. Sigmund.—p. 130.
*Therapeutic Serums. B. Feierabend.—p. 135. Conc'n.
*Dynamics of the Pulse. F. Nikisin.—p. 139.
Cancer of the Nasopharynx. D. Jelinek.—p. 143.
*Surgery of Postoperative Ileus. Jung.—p. 146.

Diagnosis of Rhinoscleroma.—Soukup reports encouraging results of cutireactions in rhinoscleroma.

Diverticula of the Digestive Tract.—Sigmund reports on several cases. One of his patients had traction diverticula of the esophagus and of the duodenum—both probably due to a tuberculous affection of lymph nodes. A diverticulum of the duodenum in a woman with cholelithiasis was due to traction by adhesions, as was verified at the operation. Six roentgenograms are reproduced.

Therapeutic Serums.—Feierabend determined the titer of therapeutic serums imported into Czechoslovakia. A few of the samples were correct. The majority were at least 20 per cent. under the alleged titer. One of them had only one half of the units claimed.

Dynamics of the Pulse.—Nikisin applied Münzer's method of dynamic determination of the pulse for diagnostic estimation of the circulation in diseased extremities. The amplitude of the pulse with increasing pressure of the rubber band is recorded. The curves obtained are valuable in research on collateral circulation and on periarterial sympathectomy.

Surgery of Postoperative Ileus.—Jung's statistics give the incidence of postoperative ileus from adhesions as 2.29 per cent. among 4,779 laparotomies made in Zahradnicky's hospital. Almost one half of them followed appendectomy. The total mortality from this ileus was 25.2 per cent.

Tohoku Journal of Experimental Medicine, Sendai

5: 263-427 (Dec. 27) 1924. Congress Languages Edition

H and O Forms of X 19 Bacilli. K. Hashimoto.—p. 263.
Agglutination of Paratyphoid B Bacilli and Mouse Typhoid Bacilli. K. Sakai.—p. 275.
Proteus Bacilli. S. Matsui.—p. 281.
Sensory Nerve Terminals and Inflammation from Skin Irritants. M. Nakamura and H. Takahashi.—p. 288.
*Resorption of Stains from Serous Cavities. S. Katsura.—p. 294.
Synthesis of Cholesterol Esters. T. Nomura.—p. 323.
Kaolin Adsorption of Serum Protease. S. Kimura.—p. 340.
Action of Kidney Poisons on Extrarenal Vascular Function. M. Naito. —p. 351.
Radium Therapy in Ophthalmology. T. Takahashi.—p. 385.
Seasonal Variation in Blood Sugar, Glycogen and Epinephrin in the Rabbit. I. Fujii.—p. 405.
Investigations on Blood of Whales. M. Sudzuki.—p. 419.

Resorption of Stains from Abdominal and Pleural Cavity.—Katsura used dogs and rabbits in his experiments. He found that solutions of crystalloid stains, in whatever quantity introduced, were rapidly resorbed from the serous cavity by the blood. The resorption of solutions of colloidal stains from the cavity occurred by the lymphatics, and much more slowly and less uniformly, but the proportion of the resorbed part to the entire quantity introduced was on the whole constant. The thoracic duct does not collect all the lymph from the abdominal cavity, as usually believed; a fairly large part is received by the right lymphatic duct. The lymph courses of the right pleural cavity do not, as hitherto assumed, lead to the right lymphatic duct, but, like those of the abdominal and left pleural cavity, chiefly to the thoracic duct.

Hospitalstidende, Copenhagen

68: 1-24 (Jan. 8) 1925

Arteriovenous Aneurysm of External Iliac. T. Rovsing.—p. 1.
*Septic Angina. E. Schmiegelow.—p. 11.

Acute Infectious Phlegmon of the Pharynx with Sepsis.—Schmiegelow states that his experience in two instances shows the possibility of recovery under proper treatment, although most cases hitherto have proved fatal in two or three days. He emphasizes the importance of prompt operation (deep incisions to reach the peripharyngeal subcutaneous tissue with its phlegmonous infiltrations). The operative treatment should be combined with serotherapy or vaccine therapy, cultivating an autogenous vaccine as rapidly as possible, with a stock vaccine or antiserum in the interim. The general nutrition should be improved; nutrient enemas, injections of salt solution, etc., may be given, and subcutaneously, camphor and digitalis. The cure depends on timely recognition and immediate treatment. One recovery in the four cases is described in detail.

68: 25-48 (Jan. 15) 1925

Cultivation of Tissues Outside the Organism. S. Kiær.—p. 25.
*A Connective-Tissue Culture Two Years Old. Fischer and Kiær.—p. 39.

A Pure Connective-Tissue Culture Two Years Old.—Fischer and Kiær consider the report of their strain of fibroblasts justifiable because it is the only one outside of Carrel's laboratory which has been cultivated for such a long time. Pure cultures, strains of tissue cells of a known power of growth, and culture mediums of constant composition are necessary for the study of cell physiologic problems in tissues growing outside of the organism.

Hygiea, Stockholm

86: 849-896 (Dec. 15) 1924

Berzelius as a Biologist. E. Nordenskiöld.—p. 857.
Diagnosis of Protracted Pneumonia of Upper Lobe Versus Pulmonary Tuberculosis. J. Leffler.—p. 872.

87: 1-32 (Jan. 15) 1925

*Roentgenotherapy in Sciatica. G. Kahlmeter.—p. 1.

Roentgenotherapy of Sciatica.—Kahlmeter reviews 33 cases, mostly severe (16 in men, 17 in women), treated during the last three years with roentgen irradiation. The duration of the affection prior to treatment was from one to three years. It was bilateral in 8. In 12 cases the cause was probably static-functional strain, as with flatfoot or knee disease. The nerve roots irradiated were those between the twelfth thoracic vertebra and the lower part of the sacrum; in case of tenderness in the gluteal region, this was also included. The dose was two thirds of the skin unit; 4 mm. aluminum filter. If the symptoms continued, the treatment was repeated after two or three weeks (often with a somewhat smaller dose). Complete recovery resulted in 55 per cent. of the cases, and has continued (in 8, more than three years, in 1, more than two, in 9, more than half a year); 30 per cent. were improved; 15 per cent. remained unchanged. The character of the sciatic neuritis and the age did not appear to affect the efficacy of the roentgenotherapy. True chronic forms may react somewhat more slowly.

87: 33-80 (Jan. 31) 1925

*Multiple Sclerosis and Hysteria. G. Söderbergh.—p. 46.
Spastic Leg Reflexes. Idem.—p. 50.
Semeiologic Study of Paralysis. Idem.—p. 59.

Multiple Sclerosis and Hysteria.—Söderbergh presents the case of a woman, aged 23, with cerebellar atactic-spastic gait. In the absence of any signs of organic affection, the diagnosis wavered between multiple sclerosis and hysteria. The gait, apparently hysteric, was, he believes, in reality due to lesions outside the pyramidal tract, the intact pyramidal system being to a certain degree able to correct the deficiency of the extrapyramidal tract, depending on the will of the patient.